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THE ANTI-INFLATIONARY EFFECTS  
OF SALES TAXATION

By



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A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
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The undersigned certify that they have read, and  
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## ABSTRACT

The persistence of inflationary pressures since World War II has fostered interest in alternatives to the manipulation of income tax rates to achieve price stability. Sales taxes are an important source of revenue for many governments and have certain very desirable properties from the standpoint of inflation control. This thesis examines the relative desirability and effectiveness of discretionary changes in sales tax rates as an instrument for reducing consumption during inflationary periods, with special reference to the Canadian situation. The traditional arguments against sales taxation and the more recent theoretical developments which may justify their use are compared. The possibility that increases in sales tax rates may be less injurious to work effort, but more likely to produce further price instability than increases in income tax rates is discussed. The thesis also analyzes the special advantages for inflation control of a temporary sales tax with a definite date of expiry.



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## CHAPTER I

### INTRODUCTION

The purpose of this study is to analyze the relative desirability and effectiveness of discretionary changes in sale tax rates as an instrument for reducing consumption during inflationary periods, with special reference to the Canadian situation.

#### The Forms of Sales Taxation

The general nature of sales taxation is well known. Due suggests the following definition: "A sales tax is a levy imposed upon the sales, or elements incidental to the sales, such as receipts from them, of all or a wide range of commodities."<sup>1</sup> Excluded are taxes imposed upon a particular commodity or group of commodities, and upon a business in the form of a fractional rate on gross business receipts. These two types of taxes are referred to as excise taxes and gross receipts business taxes respectively.

Further delineation is necessary as there are two distinct forms of sales taxes, plus one hybrid form. Single-stage taxes, as the name would imply, are levied only once during the production or distribution process. Application at the manufacturing, wholesale, or retail level are all possibilities. Multiple-stage taxes are applied at more than one stage of production and distribution. In practice certain



transfers are exempt or taxed at a reduced rate. The value-added tax, the hybrid form, is applied at every stage, but only to the value-added by the firm involved. This produces a final tax distribution which is much the same as that resulting from a single-stage tax at the retail level.

Sales taxes are closely related to expenditure taxes with a consumption base in that most forms of sales taxes include mainly expenditures on consumer goods and services. In many ways, expenditure taxes are the most attractive of such taxes, because they can be made progressive. This feature of expenditure taxes results from their personal nature. They are applied directly to individuals or households.

There is growing consensus among economists that of all the forms which sales taxes may take the value-added type and a single-stage tax at the retail level have the most desirable features. The retail form is of prime interest in Canada, because it is the type of sales tax recommended by the Royal Commission on Taxation.<sup>2</sup> For purposes of analytical simplicity, however, considerable theoretical use will be made of an expenditure tax in this study. In order to keep these two taxes as closely comparable as possible, certain assumptions must be made. In both cases, it is assumed that only consumers' goods are included in the tax base. In practice, a fairly high portion of sales taxes may be paid for expenditures on producers' goods, while certain consumer





expenditures may be excluded from the sales tax base. The only significant difference between expenditure taxes and retail sales taxes as used in this study, then, is that progressiveness of the former can be changed without altering the tax base.

When discussing a retail sales tax, we will assume that its structure is optimum. This optimality refers to the general form of the tax, rather than only its ability to aid in controlling inflation, and thus recognizes the many conflicting features desired in a sales tax. Due suggests that an optimum sales tax should meet the following requirements:<sup>3</sup>

1. Uniformity of burden distribution by commodity -- To achieve uniformity, the tax must be levied in such a manner that the amount of the tax constitutes a uniform percentage of the expenditures on commodities. Some deviations from this rule will occur because of certain general social or economic policies. These may take the form of exemptions of certain goods and services from the tax for equity reasons or of penalty excise rates on certain sumptuary goods and services.

2. Neutrality with respect to production and distribution-- The tax must not interfere with firms using the most efficient means of production and distribution. Thus, the amount of tax should not depend on the channel of production and distribution. If it taxes goods more heavily which change hands more often in production, there may be a tendency to inefficient vertical





integration. Also the tax should apply only to consumption goods. If producers' goods are subject to the tax, certain production methods will be discriminated against. Taxation of capital goods is usually considered unwise as it discourages investment.

3. Ease of administration -- The tax should be levied in a form to assure that compliance is easy, evasion difficult, and the costs of collection are minimal.

One further form of tax will be referred to in the study. During an inflationary period, retail sales taxes might be increased for only a certain group of goods, such as consumer durables. Such taxes on a particular group of commodities will be referred to as excise taxes.

#### Desirability of Sales Taxation

In the last five decades, sales taxes have become an increasingly important source of revenue for many governments. During the First World War governments sought new sources of revenue and new bases of taxation. The sales tax was not only a ready source, but also had the added advantage of decreasing consumption and so permitted the diversion of resources to the war effort. These taxes, many considered "emergency" measures at the time, have survived as governments have assumed more and more functions, and consequently need more and more revenue.



Originally the trend towards greater use of this form of taxation was not supported by most economists. In recent years, however, a considerable change of opinion has occurred, as several new theoretical arguments supporting an element of indirect taxation in the tax system have been advanced.

A summary of the traditional arguments against sales taxation and of the more recent considerations which give support to their use will provide an introduction to many of the problems discussed in detail later.

#### Traditional Arguments Against Sales Taxation

By the time of World War I, the use of sales taxes was confined to a very few countries. The disrepute in which they were held resulted from their historical record, the development of democratic government, and the rise of the ability-to-pay doctrine.

Sales taxes have a long history -- that very history, in part, brought about their withdrawal in the 19 century. There were apparently sales taxes in ancient Egypt, but little is known about them. The earliest recorded example of such taxes was the centesima rerum venalium introduced by Augustus in Roman times.<sup>4</sup>

The Spanish alcavala is the most notorious example of "this most ruinous of all taxes."<sup>5</sup> It is frequently blamed for the decline in Spanish manufactures, commerce, and agriculture.



This ad valorem tax of 10%, later 14%, imposed in 1341 in Spain and her colonies, was levied on the selling price of all commodities, raw or manufactured, movable or immovable, and chargeable as often as they were sold or exchanged. A veritable army of officials was employed in collecting and enforcing the alcavala, and their constant visits were dreaded by every farmer, manufacturer, merchant and shopkeeper. The pyramiding of the tax tended to localize production and discourage division of labour, with resulting ill effects on commerce. Catalonia and Aragon, both of which had purchased out of the tax, became the most prosperous of the Spanish provinces.

There were a number of other countries where general sales taxes were tried, generally with disappointing results.<sup>6</sup> The tax proved to be very unpopular and often not nearly as productive of revenue as expected.

There was thus ample historical evidence in the 19th century that taxes on the sale of commodities had serious defects. The officials enforcing and collecting the taxes had earned an unenviable reputation and their intrusions had created much resentment. Enforcement was often arbitrary and uncertain, thus sinning against the canons of taxation laid down by Adam Smith.

The general rejection of sales taxation, however, was based on more than historical grounds. Democracy was becoming





the dominant form of government in the western world. With this rise of democratic government, the elusive goals of equality and liberty were accorded great importance, although exact definitions of these ideals were not immediately forthcoming. Sales taxation, however, appeared to frustrate these twin goals, no matter how defined. A tax which involved continual visits of the tax collector was not consistent with liberty, and a tax which placed heavier burdens on certain segments of the population was not consistent with the new ideal of equality. The tax in addition to its historical record, thus had to face charges that it was undemocratic.

Possibly the most devastating attack on sales taxes, however, was based on recently developed tools of economic analysis, particularly the introduction of "utility" into the theory of value. This analysis combined with certain generally accepted hypotheses, produced a very strong theoretical case against the use of such taxes. This argument can be outlined in two statements:

1. While proportional and progressive taxes can be strongly defended, regressive taxes are so obviously inequitable that they should only rarely be considered.

2. Sales taxes are regressive.

On the basis of these two propositions, sales taxes were denounced by almost all economists in the 19th century and early 20th century.





It is not our purpose to describe the long and at times bitter battle which political philosophers, lawyers, and economists have waged over the merits of proportional versus progressive taxation. The important point is, that in the vast literature pertaining to this debate, scarcely anyone has even stopped to contemplate the possibility of there being some merit in a regressive tax structure, and those that have, do so only for the sake of completeness, dismissing it cursorily.<sup>7</sup> Obviously regression is considered to be so alien to any standard of fairness that it is not to be considered. One possible reason for this is that a majority of people feel that the broad question of equality dictates that disparities in income and the ability to consume should not be enlarged.<sup>8</sup>

Once it had been conclusively decided that regressive taxes were "bad," sales taxes were doomed, as they were considered to be the prime examples of regressive taxation. It is usually assumed that the tax is shifted forward to the final consumer, and under this assumption the burden falls heaviest on those who spend a large percentage of their income on taxable goods. This is by no means objectionable in itself; indeed there are certain advantages in such incidence of taxes. An example of this would be in controlling excess consumption. It is usually felt, however, that the lower income groups, spending the largest portion of their income on taxable goods, will bear an undue portion of such taxes. One important reason



for this is that people in the lower income groups tend to consume a larger portion of their income, and thus save less than those with higher incomes.

The statistics would appear to support the contention that sales taxes are regressive, at least if food and shelter are included in the tax base, and if the data is on a yearly basis.<sup>9</sup>

Another ideal against which a tax may be measured is neutrality. It requires that beyond accomplishing its desired goal or goals, a tax should not interfere with the functioning of the market system. A general sales tax, applied only to final consumption goods, and shifted completely to the final consumer, might be expected to be neutral both in respect to resource allocation and the choice of methods of production. Unfortunately, not even this much can be claimed. As was indicated by Abraham Tarasofsky in a report prepared for the Royal Commission on Taxation:

"An outstanding obstacle in the path of complete economic neutrality, with respect to the over-all allocation of resources,... is the practically unlimited range of the elasticities of the demands for, and the supplies of, the myriad of consumer goods in the Canadian economy, and of the derived demands for and the supplies of, their innumerable inputs. For these and other reasons no common degree of tax-shifting, indispensable to full neutrality, is attainable at any time, given a single-rate general commodity tax system. Indeed, even the most sophisticated multi-rate system could not fail to violate the cannon of economic neutrality in an economy, such as the Canadian, in which relative prices are never static and are often highly dynamic, to say nothing of the staggering administrative problems it would entail."<sup>10</sup>

Aside from the problem of different elasticities of demand



and supplies, the tax structure necessary to approach neutrality must be deviated from in the interests of equity. Although this is a legitimate reason for the exemption of some goods from the tax base, other deviations from a neutral structure must be regarded as contrary to optimum economic welfare.

The Carter Commission found that the present federal manufacturers sales tax scored very badly from the standpoint of neutrality. The existence of the special excise taxes added to the problem. In the view of the Commission, the proposed shift to a retail tax would eliminate many of the obstacles to a neutral system. In addition, the widening of the tax base to include many services now excluded would be beneficial not only as an aid to a more neutral system, but also to produce a more equitable one. The additional progressiveness would result from the tendency of the value of services consumed to increase more than proportionally with income.

The above are valid reasons why neutrality can never be completely achieved. In practice, further deviation may result from additional exemptions from the tax base, incomplete shifting of the tax burden to the final consumer, price increases in excess of the amount of the tax, and taxation of producers goods. Such distortions should naturally be minimized.

These arguments form a fairly strong case against the use of sales taxation. It is possible to understand, then, the strong condemnation of this tax by economists early in this century.<sup>11</sup>





## Arguments for Sales Taxation

Despite the disrepute of sales taxes in the first decades of this century, since the First World War they have been widely adopted. At the time of the war, only a few countries had included general sales taxation in their fiscal systems. At the present time a partial list of countries using this form of finance would include Austria, Finland, Switzerland, Australia, New Zealand, Norway, Pakistan, Indonesia, The Phillipines, The Argentine Republic, Brazil, Uruguay and Greece. Missing from this list are the Common Market countries which are adopting the French value-added tax, as part of their tax harmonization efforts. In addition, there are the sales taxes collected at the state or provincial and municipal levels. In Canada, nine of the provinces levy the tax. The changes in attitudes, methods, conditions and accepted theory, which made this renaissance possible, must be examined.

The need of ever-increasing revenue has been and remains the most important single reason for the increased use of sales taxes. At the federal level, heavy defence and welfare expenditures have forced governments to seek new sources of revenue. Rapidly growing costs, especially for education, have created a severe revenue problem for junior levels of governments. Sales taxation, with its excellent yields, has often seemed to be the only source of adequate additional revenue. The Carter Commission indicated that revenue considerations





dictated the retention of sales taxes in the Canadian tax system.

Why have additional revenue needs not been met entirely by increases in income taxes? The principal reason appears to be that governments fear income taxes may be pushed too high. This fear is the result of difficult-to-quantify suspicions that, at some point, high tax rates will have disruptive effects on the incentive to work. The Carter Commission echoed that fear in its statement that: "Although we have no evidence to support our contention, we are convinced that high marginal personal rates of tax do have negative effects on labour, managerial, and professional effort."<sup>12</sup> The need for revenue without adverse economic effects, then, is the principal justification for the Commission's recommendation that sales taxation be retained.

As indicated above, the most objectionable feature of sales taxation has always been its inequitable nature. The inequity arises from the lower average portion of income spent on taxable goods as income rises, and from the distribution of the tax burden within income classes, which tends to penalize heavy spenders. Often these heavy spenders, such as those with large families, are not considered by society to deserve a heavy tax burden.

Developments in the theory of consumer behavior suggest that the regressivity argument may have been unduly stressed.



Conventional measurements of regressivity can be questioned on conceptual grounds. The hypotheses of consumer behavior developed by Friedman and Duesenberry postulate that a consumer faced with a lower income for a short period will attempt to maintain either the "permanent" or "previous peak" consumption level. Conventional measures of regression use annual data. The low income groups will contain a significant proportion of individuals who are spending on the basis of a higher "permanent" or "previous peak" income for a period of this length. As a result regressivity will be overstated. This is really an empirical argument, and can only be decided by statistical information which is not yet available.

The regressive features of the sales tax can be modified. The exemption of certain goods, such as food and shelter, which form a large proportion of expenditures by lower income groups, can greatly reduce or even remove regressiveness, although there will be a resultant fall in yield.<sup>13</sup> At the same time extension of the tax base to include service expenditures which are especially important at higher income levels will further reduce regressiveness. It is apparent that the undesired regressive features of a general sales tax can be corrected by a careful selection of the tax base. This can only be achieved, however, by allowing some misallocation of resources to occur. There must be, then, some trade-off between the goals of equity and neutrality.



The concept of vertical equity really applies only to the tax system as a whole. From this viewpoint the regressivity or progressivity of any particular tax is not of crucial importance. Since there has been some feeling that the tax system may have become overly progressive, sales taxation is a politically acceptable means of introducing an element of regression. This, of course, does not justify the deviations from horizontal equity which sales taxes may produce.

The traditional argument against sales taxation based upon equity grounds has, thus, been considerably weakened. At the same time, there have been further developments which appear to give additional support to the use of sales taxes.

Sustained economic growth is generally accepted as one of the prime goals of economic policy. It has received increased attention in Canada and the United States as a result of unsatisfactory national growth performances in the late 1950's and early 1960's.

Economic growth can occur through changes in technology, in the supply and quality of resources, and in the savings-income ratio. The higher the savings-income ratio, the greater the amount of investment which may be made. Thus one method of enhancing the potential for economic growth is by increasing the volume of savings at full employment. A change in tax policy may induce greater savings by increasing the reliance for revenue on taxes which are more favourable to saving.





In the United States, and to a lesser extent in Canada, heavy reliance on direct taxation has been cited as a reason for the failure to generate sufficient savings. The solution is to substitute indirect for direct taxes.<sup>14</sup> Sales taxes may increase savings because it shifts the tax burden to those with a lower propensity to save, and provides greater incentives to saving through more favourable terms.

An area of traditional concern with the effects of sales taxation was in regards to resource allocation. The distortions caused by even a perfectly general tax were discussed previously. But perhaps such distortions are not a feature of sales taxes alone; recently questions have been raised about the distortions in resource allocation produced by income taxation, especially in the form of corporation taxes.

Four possible reasons for misallocation of resources occurring, when income taxes are used, have been mentioned. These are:

1. Efficient firms are taxed, while inefficient firms are not. There will then be a shift of resources from the efficient to the inefficient firm.
2. A bias is exerted on the combination of capital and labour inputs in favour of labour. The optimum input-mix is thus not achieved.
3. There is a bias in favour of goods which are not significantly subject to the tax such as those produced by agriculture.





4. In countries with sales taxation, exporters can sell free of tax. In countries with the corporation tax, exports will include part of the tax. Exporters in the latter countries will thus be subject to a competitive disadvantage. This is especially important since the decision of the Common Market countries to adopt a value-added tax. This disadvantage would, of course, be dependent upon the ability or disability of producers to shift the tax.

Compelling theoretical arguments can obviously be marshalled in support of sales taxation. There is a practical side to the appeal of sales taxes too. These arise from administrative considerations and from the problems of fiscal relations in a federation.

Sales taxes may be easier to administer than income taxes because of the smaller number of taxpayers. The extent of this advantage depends upon the form of the sales tax. It is difficult to argue, however, that a mixed system of taxation including both income and sales components will be cheaper to administer than a system with income tax alone, unless a single tax will be enforced more vigourously since there is no other tax available to "catch" the non-payers. At the provincial level, where there may be only one tax to collect, administrative ease is a definite attraction.

The existence of more than one level of government often leads to a demand for separate revenue sources. The Carter



Commission indicated its support for this arrangement in the interests of fiscal responsibility. At a more mundane level, any government finds it much easier to increase tax revenues if it is able to alter the tax base and rate structure of a tax without negotiation with another level of government. Since there are only a limited number of possible taxes, the desire for separate tax sources will make some level of government adopt a sales tax.

### Outline

The reduced opposition to the sales tax on theoretical grounds as well as recent recommendations and adoptions have assured an important position for the sales tax as a source of revenue for many governments. For example, in Canada, the Carter Commission has recommended, albeit somewhat reluctantly that sales taxation be retained as an integral part of the tax system. The Common Market countries have accepted the French value-added tax in their tax harmonization efforts.

Considerable advantages have often been claimed for sales taxation as an instrument for maintaining price stability. Governments may be expected, then, to be tempted occasionally to utilize changes in the rate of an existing tax to ease inflationary pressures, rather than adopt an alternative fiscal policy. In Chapter II the relative theoretical advantages and disadvantages of the sales tax in combatting inflation are



compared to the personal income tax. For analytical simplicity certain aspects of this comparison are carried out by using the expenditure tax to represent the sales tax. In Chapter III, the form of the recommended Canadian federal sales tax and the possible effects of its use by the government to achieve specific fiscal aims are examined. The achievement of price stability is of primary interest, but some discussion of the effects of the tax on other variables subject to control by fiscal policy, especially the balance-of-payments, are included.





# NOTES

<sup>1</sup> John F. Due, Sales Taxation (London: Routledge and Paul, 1957), p. 3.

<sup>2</sup> Report of the Royal Commission on Taxation, Kenneth LeM. Carter, chairman, (6 vols.; Ottawa: Queen's Printer, 1966).

<sup>3</sup> Due, op. cit., pp. 41-42.

<sup>4</sup> The centesima rerum venalia was a one percent tax on sales. It proved very unpopular, as did all attempts to introduce indirect taxes in the Roman empire. See Edwin R.A. Seligman, Studies in Public Finance (New York: Macmillan, 1925) pp. 124-125.

<sup>5</sup> Adam Smith, The Wealth of Nations, Book V, Chap. 2.

<sup>6</sup> The unhappy experience of France in the 15th - 17th Century; Naples in the 15th Century; and the German Empire in the 17th and 18th centuries with general sales taxes are outlined by Seligman, op. cit., pp. 125-128. These were largely agricultural societies and this made taxes on transactions very hard to collect. This may explain some of the problems encountered.

<sup>7</sup> "It is so clear no one today favours any tax because it is regressive that the term itself has become coloured. Since a regressive tax... is not a serious alternative the question of this essay can be narrowed and restated: On what grounds is a progressive tax... to be preferred to a proportionate tax...?" Walter J. Blum and Harry Kalven Jr., The Uneasy Case for Progressive Taxation (Chicago: University of Chicago Press, 1953), p. 3.

<sup>8</sup> "The case for drastic progression must be rested on the case against inequality - on the ethical or aesthetic judgement that the prevailing distribution of wealth and income reveals a degree (and/or kind) of which is distinctly evil or unlovely." Henry C. Simons, Personal Income Taxation (Chicago: University of Chicago Press, 1938), pp. 18-19. This was Simons ultimate case for progression. On these grounds one could accept that a judgement had been made by society that increased inequality is definitely not desirable, and on this basis reject regression.





TABLE I-I

Distribution of Burden by Income Class Canadian Manufacturers'  
Sales Tax, Five Major Cities, 1953.

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Income Class	Taxable Expenditures as Percentage of Income if All Food Were Taxable (Percent)
<hr/>	
\$1,800 - 2,499	81
\$2,500 - 2,999	77
\$3,000 - 3,499	71
\$3,500 - 3,999	70
\$4,000 - 4,499	64
\$4,500 - 4,999	63
\$5,000 - 5,499	59
\$5,500 - 5,999	61
\$6,000 - 6,500	58

Source: John F. Due, Sales Taxation (London: Routledge and Paul, 1957), p. 26.

This table shows the regressive features of the existing Canadian manufacturers' sales tax. A study prepared for the Carter Commission using 1959 data found that sales taxes are regressive for all income levels from \$2,000, when food and shelter are taxable. Carter Commission, op. cit., Vol V., pp. 169-171. By excluding food and certain other items, it may be possible to make the sales tax less regressive or even progressive. The tax may also appear less regressive if data for longer time period is used. These possibilities are more fully discussed later.

<sup>10</sup>Abraham Tarasofsky, The Feasibility of a Canadian Federal Sales Tax, Studies of the Royal Commission on Taxation, Number 6 (Ottawa: Queen's Printer, 1964), pp. 1-2.

<sup>11</sup>Edwin Seligman in the closing line of a memorandum submitted to the Senate Finance Committee in 1921 suggests the strength of the opposition to sales taxation: "The general sales tax is a discarded remanant of an outworn system, it is essentially undemocratic in its nature and it would, if enacted, exaggerate rather than attenuate the present inequalities of wealth and opportunity." Seligman, op. cit., p. 138.

<sup>12</sup>Carter Commission, op. cit., Vol. II, p. 28.



<sup>13</sup>A special study carried out for the Carter Commission indicated that, sales taxes with the 1964 tax base, would have been progressive to the \$7,000 income level and proportional above this, with food and shelter exempt. The figures were for 1959. Ibid., Vol. V., pp. 169-171.

<sup>14</sup>The Carter Commission is very skeptical about this argument for increased reliance on indirect taxes. Firstly, they do not appear to be very optimistic or enthusiastic about increasing the level of saving and investment at full employment. Secondly they feel that there are other more efficient means available to achieve this result. As an example, a budgetary surplus produced by an over-all higher level of taxes would increase savings without sacrificing equity. Richard A. Musgrave, "Growth with Equity", Papers and Proceedings of the Seventy-fifth Annual Meeting of the American Economic Association (Pittsburgh, 1962), pp. 323-333.



## CHAPTER II

### THE ANTI-INFLATIONARY EFFECTS OF SALES AND INCOME TAXES

In a modern economy fiscal policy is often directed largely toward the reduction of consumption expenditures during an inflationary period. The alternatives, reduction of government expenditures or of investment, may be difficult to implement or undesirable. Indeed, the inflationary pressures may have originated in the need by the government to command a larger share of goods, and services. This is obviously the case in war-time. Even in peace-time past commitments or other circumstances may require that government expenditures be maintained at the existing level or may limit the extent of reductions. The latter situation is usually present when the expenditures are incurred at several levels of government. In periods of inflation, demands for increased expenditures may be difficult to resist. A reduction of investment expenditures may be considered inadvisable: increased income and growth are associated with increased investment, and governments may be reluctant to curb growth. Often, then, aggregate demand may only be diminished and inflation curbed by a reduction of consumption expenditures.

In this chapter the use of sales taxes in an inflationary period will be evaluated as an alternative to the use of income taxes. Different forms of taxation have different effects on consumption. Since consumption is of such crucial importance







in controlling inflation, the effect of the two taxes on aggregate consumer demand will be analyzed.

While the effect of taxes on consumption are very important, other effects may be of some significance. For instance, when the possibilities of obtaining goods and services are reduced by taxation, there will be effects on the incentive to work. The changes in incentives which result may not be the same under a sales tax as under an income tax.

Price increases are the most obvious characteristic of an inflationary period. It is quite likely that the impact of various taxes on the variables which generate price level increases will differ. These direct effects of taxes on prices cannot be ignored.

The three major topics to be discussed in this chapter, then, are the different effects of sales taxes and income taxes on consumer spending, the supply of labour and the price level. Before considering the major topics, however, a few technical points must be discussed.

In order to compare the relative effectiveness of two taxes, some criterion must be accepted to assure that the taxes are equivalent in some significant sense. The criteria adopted may vary, depending upon the comparisons to be made. The traditional method has been to compare taxes of equal yield. In matters of distribution and allocation this will be adequate. When discussing stabilization policy, however,



it may not be sufficient. If an inflationary gap exists, the fiscal measure used to close it will generally act through a reduction in the consumer's ability to command goods and services. A proper basis for comparison in this case may be taxes that reduce consumer expenditure by equal amounts. Both of these criteria will be used in the following analysis, when applicable.

When a tax is applied, there are two possibilities; either it will be permanent or temporary. If a tax is to be temporary and is known to be temporary, its effects on the economy may be vastly different than those of a permanent tax. Moreover, a temporary income tax and a temporary sales tax may produce widely divergent results. Attention must, then, be focused on the time period for which the tax will apply.

### Consumer Spending

Both sales taxes and income taxes will reduce the consumption of goods and services. The two taxes are, however, very different and their effects on consumption will almost inevitably differ. If the "economic efficiency" of a tax in curbing inflation is related to the reduction in consumption resulting from a given revenue, one tax may be more "efficient" than the other.<sup>1</sup> This section is devoted to an examination of the efficiency of the two taxes.

Is economic efficiency significant? If consumer expenditures



are to be restricted to a certain level anyway, what does it matter how large the yield is? Some economists have felt that the efficiency argument seems "a considerable over-estimation of the advantages of economizing on tax revenues, which are not a scarce resource."<sup>2</sup> Naturally from the point of view of the individual, the tax with the lower yield requirement appears to be better, but this is an illusion. The result does not hold, when the group as a whole is considered.

Despite the above considerations, economic efficiency appears to have some significance.<sup>3</sup> The illusion of the individual taxpayer is not unimportant, if there is a psychological cost involved in destroying it. Secondly, the illusion will be a definite benefit if there are fears that the taxes may impinge upon the incentive to work. The individual taxpayer is actually correct in the sense that lower tax yields will leave him with greater command over goods and services in the future. This will occur because the lower money taxes leave private citizens with more money balances and paper titles, unless there are price increases to offset this gain.

Both taxes reduce the consumers' ability to command goods and services; the income tax by reducing the disposable income of consumers and the sales tax by reducing the real value of their money income. The different effects of the taxes can be traced to differences in the mechanisms by which the two





taxes reduce purchasing power.

In addition, differences in efficiency may arise from substitution effects. Income taxes discriminate against saving and accumulation and in favour of consumption. Thus an increase in sales taxes is likely to be more active in limiting consumption than an income tax with the same yield.

Finally the price changes associated with the sales tax will change the value of paper titles held. The "Pigou effect" will be present, and operate against consumption when sales taxes are levied.

Possible reasons for unequal "economic efficiency" of the two taxes are:

1. Nature of the tax base.
2. "Money illusions."
3. Differences in the distributional impact of the taxes.
4. Substitution effects.
5. The "Pigou effect."

These will be discussed in detail below.

#### Nature of the Tax Base

Income taxes have an income base, while sales taxes have a consumption base. This difference in base determines the manner in which the two taxes reduce consumption. Income taxation influences consumer spending by reducing disposable income. The resultant decrease in consumption is cushioned to





the extent that the tax is paid from income which would have been saved in the absence of the tax.

The assumption throughout this chapter is that sales taxes raise the prices of goods, and their final burden rests upon the consumer. When prices of goods and services increase, the same money income will purchase less. Some income earmarked for saving before the tax may be used to support consumption expenditures.

It is not obvious from the above which of the two taxes would reduce consumer expenditures more for a given tax yield. A model can be constructed which indicates the relative "efficiency" of the taxes, assuming all other effects to be absent.<sup>4</sup>

A potential inflationary gap is assumed to exist. That is the total of ex ante government, consumption, and investment expenditures exceed the real supply available. Investment and government expenditures have been assumed constant, so that any reduction in the inflationary gap must result from a decrease of consumption expenditures. If the tax yield required to remove the gap is smaller when using one of the taxes, then it is by definition more "efficient" than the other tax.

The sales tax will be assumed to apply at an equal rate to all consumption expenditures, and to be the only tax in use. It is thus equivalent to a proportional expenditure



tax on consumption. After the model is developed, the results can be applied under more realistic conditions. The marginal propensity to consume is assumed to be alike for all taxpayers and constant.

Income tax - Income taxes are assumed to have no effect on the general price level.

Using an income tax we have two equations:<sup>5</sup>

$$C = a + (1 - t_y) bY_o \quad (1)$$

$$Y_o = C + 1 + G \quad (2)$$

Substituting C as defined in eq. (1) into eq. (2) and solving for the equilibrium yield of tax, we obtain

$$t_y Y_o = \frac{a + bY_o + 1 + G - Y_o}{b} \quad (3)$$

Since  $Y_o$  is assumed equal to full employment income at a given price level, the inflationary gap (assumed to exist) is defined by the numerator. The reduction of consumption or  $b t_y Y_o$  must be equal to the inflationary gap in order to remove the threat of inflation. The tax yield required is thus larger than the inflationary gap.

Sales tax (proportional consumption tax) - Since prices are assumed to rise, measured national income is the net national product at factor cost plus the tax rate times the net national produce at factor cost.

$$Y = (1 + t_c) Y_o \quad (4)$$

The application of the tax results in an upward shift of the consumption function. This shift will be parallel to the



old consumption function.

$$C(1 + t_c) = a(1 + t_c) + bY_o \quad (5)$$

$$Y_o = C + I + G \quad (6)$$

Substituting as before, and solving for the required yield of the sales tax, we now obtain  $t_c C = a + at_c + bY_o + I + G - Y_o$  (7)

$$\text{or } t_o C = \frac{bY_o(Y_o - I - G)}{Y_o - a - I - G} + I + G - Y_o \quad (8)$$

Comparison of eqs. (3) and (8):

The yield required under the sales tax will be greater, the same, or smaller than the yield required under an income tax, depending on whether

$$\frac{bY_o(Y_o - I - G)}{Y_o - a - I - G} + I + G - Y_o - \frac{a + bY_o + I + G - Y_o}{b} \gtrless 0 \quad (9)$$

Rewriting eq. (9) in a different form we have:

$$\frac{a + bY_o + I + G - Y_o}{b} - (I + G) \gtrless 0 \quad (10)$$

The first term is the income tax yield. Equation (10) will be equal to zero only if the required income tax yield equals  $I + G$ . For this to occur, savings must be zero.<sup>6</sup> The required yield of the two taxes will be the same.

In the more usual situation, with positive savings, the required income tax yield will fall short of  $I + G$ . Then the required sales tax yield will be less than the required income tax yield. In the case of negative savings, the opposite would be true. Since in most real situations savings are positive, a sales tax is generally more efficient than an income tax.







With an income tax, the decreased level of disposable income is divided between savings and consumption. The tax yield must exceed the size of the inflationary gap, because part of the levy is paid from the portion of disposable income which would have been saved in the absence of the tax. When a tax with a consumption base is applied, consumption expenditures will be reduced more drastically, because the taxes do not apply to that part of income saved. It is true that a consumer unit not subject to money illusion may make an attempt to readjust the balance between savings and consumption. However any reallocation of savings to consumption expenditures will increase the tax liability of the unit. Thus a dollar of tax yield from a consumption-based tax will have a more powerful effect on consumption expenditures than a tax with an income base, provided that savings are positive.

### Money Illusion

If consumers are subject to money illusion, sales taxation has additional effectiveness. Money illusion occurs when the consumer ignores an increase in the price level. Expenditures are maintained at the same level in money terms, despite the fact that less real goods and services can be purchased. In this case, consumer expenditures in real terms are decreased by the amount of the tax. The increase in consumption tax required to remove a potential inflationary gap equals  $T_c = -C$ .



The income tax is not as efficient. If the increase in income tax equals  $T_y$ , then the initial change in consumption is only  $-b T_y$ . In order to produce a reduction equivalent to that achieved by the consumption-based tax, the income tax yield must equal  $T = -\left(\frac{1}{b}\right) C$ . The required yield is definitely larger for the income tax, assuming that the marginal propensity to consume is less than one. A model, with the same assumptions as in the one above, may be used to indicate the increased efficiency of the sales tax with consumers subject to money illusion.

Income Tax (Money Illusion) - Since there is no change in the price level, money illusion cannot occur. The equilibrium yield is that given by eq. (3)

$$t_y Y_o = \frac{a + bY_o + I + G - Y_o}{b} \quad (3)$$

Consumption Tax (Money Illusion) - The equations are the following:

$$C + t_c C = a + bY_o \quad (11)$$

$$Y_o = C + I + G \quad (12)$$

Substituting C as defined in eq. (8) into eq. (9) and solving for the equilibrium tax yield.

$$t_c C = a + bY_o + I + G - Y_o \quad (13)$$

The required tax yield is just equal to the potential inflationary gap. This is less than the required yield for both the income tax and the sales tax without money illusion. The yield required for a sales tax when the consumer is not subject to money illusion is  $t_o C = a + a t_c + bY_o + I + G - Y_o \quad (7)$



The difference is equal to the amount which the consumer spends to overcome the price increases. It can be seen that the government's restrictive objective can never be fully avoided.

#### Differences in Marginal Propensities to Consume

There will be income and substitution effects when any tax is increased, decreased, or initiated. In the case of an individual household, the impact on consumption and saving will be determined partially by the nature of the tax and partially by the household's preference schedule. However, when the households are combined into a group, there will be a variety of preference schedules or, what is really the same thing, many different marginal propensities to consume. Now the segments of the group upon which the tax bears will partially determine its effect on consumption.

Traditionally it has been assumed that the burden of a sales tax will be distributed in a manner especially suited to reducing consumption. A standard statement of this argument as given by Due follows:

"Since more of the burden of the former a sales tax rests on the lower-income groups which have little margin of saving -- obviously the sales tax will affect consumption purchases to a greater extent than an income tax increase (yielding the same revenue) borne largely in the higher income tax brackets. But this advantage could be attained equally well by a more regressive type of income tax increase."<sup>7</sup>





The meagre support which this argument gives to the hypothesis that sales taxes are superior to income taxes in combatting inflation is evident by its dispatch in one line. The advantage stems solely from the regressive features of the tax, and this is not only inequitable, but also easily matched by an income tax with a different rate structure. It would have more political feasibility however, and thus be useful in a short-term situation, such as war.

But is a sales tax really regressive? The complexities raised by this simple question have only recently been perceived.

"We get a different answer as we change the inclusiveness of the tax, the definition of progressiveness, and the incidence assumptions. This much is widely understood. Perhaps less well understood is the fact that the progressiveness of a sales tax is affected as we vary the definition of income and consumption, the time period of receipt and expenditure, the receiver unit concept, and the status ranking. The time period is especially important."<sup>8</sup>

The most recent research on these points would appear to cast serious doubts on the doctrine that sales taxes are extremely regressive. We will consider two of the most important of these. We are not attempting to show that the sales tax is progressive or even proportional, but merely that it may not be as regressive in comparison to the income tax as is usually assumed. The structure of the income tax is also crucial in determining the relative progressivity of the two taxes.



Most sales taxes exempt certain goods, usually food. It is commonly accepted that this will tend to alleviate regression, since the lower income groups commonly spend a larger percentage of income on food than those in higher income brackets. Due suggests that it is only in the upper income brackets that the tax becomes regressive when food is exempted.<sup>9</sup> Thus, when discussing sales taxes with exemptions, the regressive features should not be given as much weight as in the case of an across the board tax.

The other form of criticism is more basic in nature. The regressiveness of a tax is affected by the hypothesis of consumer behavior which is used. If Friedman's permanent income hypothesis is chosen, rather than the relative or absolute income hypothesis, the sales tax appears less regressive. In the permanent income hypothesis, it is posited that families consume not on the basis of their current income, but on the expectation of their long-term resource position.<sup>10</sup> That is consumer units really base consumption decisions on what they consider to be normal or permanent income. Friedman also suggests that if consumption is defined to include the use value of durables -- the consumption income ratio would be the same for all levels of incomes. Obviously if families at all levels of permanent income spend the same fraction of their income, regressivity is apt to be apparent rather than real.



Most studies of consumer behavior are for one year periods. For any yearly period, the lower income groups will contain a significant proportion of families spending on the basis of higher permanent incomes. The yearly studies which include these families will be overstating regressiveness. It is only by using the period of time for which the family foresee its permanent income, that a correct picture of regressiveness will be obtained.

The final verdict on which hypothesis predicts consumer behavior best has not been reached and thus a decision on the importance of this argument for sales tax progression, will have to await more detailed studies. There seems little to choose at present between the predictive and explanatory powers of sophisticated versions of the three hypotheses. However, if the permanent income theory were to attain dominance, the traditional criticism of sales taxes as unduly regressive would require modification.

Due also stated that the effectiveness of the sales tax results from it falling most heavily on the lower income groups, which have "little margin of saving."<sup>11</sup> This would appear to mean that they save a lower proportion of income than consumer units in higher income brackets. As is well known, this is not critical. What is critical is the marginal propensities to consume of the two groups.<sup>12</sup> It is quite possible that the differences in marginal propensities to consume will not







be large enough to affect significantly the volume of expenditures.<sup>13</sup> Thus, even if the tax does fall most heavily on the lower income groups, the effect on consumer expenditures may not be significant.

The different pattern of burden argument supporting sales taxes thus appears considerably weakened. First of all, it appears likely that the sales tax is not as regressive as is usually assumed. Second, the differences in marginal propensities to consume between high and low income groups are not as significant as is often suggested, and thus different distributions of tax liability will not affect consumption expenditures greatly. This is not to deny that the different pattern of burden effect will be present, but merely that it is unlikely to have great significance. As far as the comparative efficiency of the two taxes is concerned, this changes very little, as this particular argument was a very weak one anyway.

Due also suggests that: "A limited advantage exists for the sales tax because of the heavier burden which this tax places on those persons within various income classes spending higher-than-average percentages of their incomes."<sup>14</sup> The additional advantage of sales taxes over income taxes due to the distribution of burden within income groups is difficult to judge and depends on what sales tax rate structure and exemptions are being compared to what income tax. The denial of the importance of the pattern of burden among income groups



certainly does not apply to this point.<sup>15</sup> Thus, one must accept that this will give some advantage to sales taxes, although the actual amount cannot be determined at present.

#### Substitution Effects Among Consumption, Saving and Accumulation

Saving may take place for either of two purposes; future consumption or accumulation. The primary function of savings is to provide for increased consumption at some time in the future. Other reasons for saving do exist however. These are lumped together as accumulation, and include savings for completely unexpected emergencies, to increase status, and for one's heirs. The latter type of saving may also be regarded as being for future consumption to the extent that one's heirs are a continuation of the consumer unit.

Sales taxes apply only to that part of income which is spent on taxable goods; therefore tax liability can be reduced by curtailing expenditures on these goods, and either saving, or purchasing non-taxable goods. On the other hand, income taxes cannot be avoided by saving more, only by earning less or taking earnings in a non-taxable form. This distinction is basic to the substitution between present and future consumption upon application of the two taxes, which causes savings to be greater under sales taxes than under income taxes.

The results of the famous debate on the double taxation of saving can shed some light on the substitution effects





involved, when income taxes or sales taxes are applied.<sup>16</sup>

Much of the debate hinged upon the concept of equity being used, but there is one point which is significant:

"One of the traditional claims made for income tax has been that income tax is "neutral" as between different forms of expenditures and hence does not involve a distortion of economic behavior in the way that differential commodity taxes do. What Mill's argument shows is that income tax itself suffers from precisely the same defect once we focus attention, not on the distribution of expenditures between different forms of consumption, but on the choice between spending and saving or between present and future consumption."<sup>17</sup>

Thus in the absence of any expectation of a future removal of the tax, it might be expected that there would still be a tendency to save more with a tax on consumption. This effect would be most pronounced if an actual expenditure tax were imposed, but at least some effect of this type must be expected with a sales tax.

A numerical example of the type used by Kaldor can be utilized to explain the discriminatory effect of income taxes on saving. It depends on the interest rate and the marginal rate of taxation. Compare the position of a man with an income of \$6,000 a year, whose disposable income has been reduced to \$3,000 by income taxation, with another man who earns \$3,000 a year, but pays no tax. Assume further that the market rate of interest is 6%. Then the man with the income of \$3,000 can add \$6 a year to his future income for every \$100 which he refrains from consuming this year. The man with the original income of \$6,000, assuming a marginal tax rate of 50%, can only





add \$3 a year to his future income stream. Obviously the two men will not save the same amounts. Thus income taxes are not neutral in this sense.

The substitution effect which occurs between present and future consumption can be given a more rigorous presentation.<sup>18</sup> Assume that there is only one homogeneous consumer good, and that the supply of effort is fixed. The model used will be for two periods. All income is earned in the first period, but consumption is divided between the two periods. Since there is a positive rate of interest, smaller consumption in period 1 can be traded for larger consumption in period 2. All income plus interest must be consumed over the 2 periods, that is no accumulation occurs.

In Figure 1, period 1 consumption is measured on the horizontal axis, and period 2 consumption on the vertical axis. The shape of the indifference curves depends on the actual time distribution of needs, how these are perceived, and the influence of impatience. Whatever the particular situation, we will assume that both present and future consumption are subject to declining marginal utility of income.

Let OA in Figure 1 be the income received in period 1. This income may either be consumed in the first period or invested. If the rate of interest equals  $(OB - OA) / OA$ , period 1 consumption of OA may be traded against period 2 consumption of OB.  $OB/OA$ , which is the slope of the price



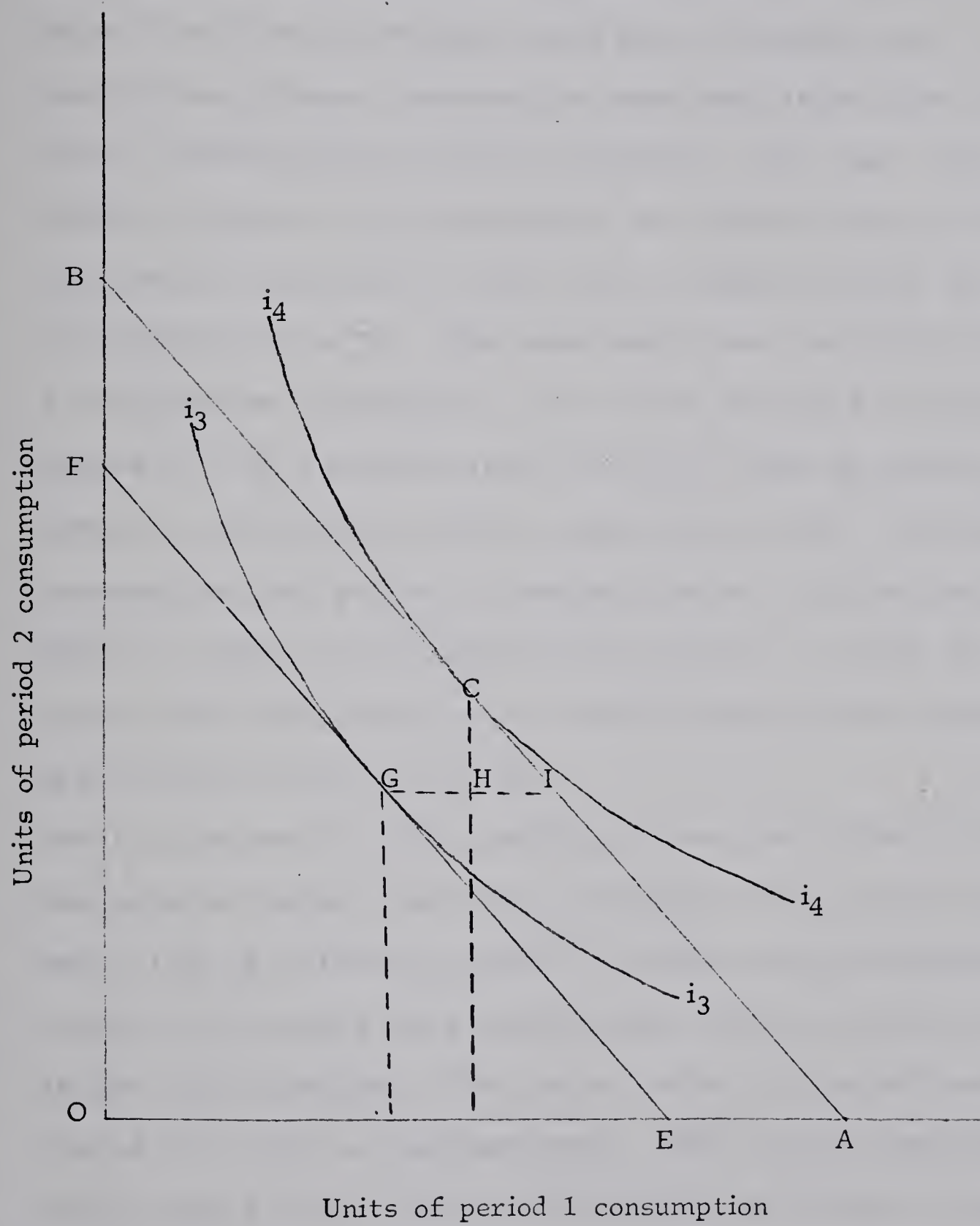


FIGURE 1



line, is equal to  $1 + i$ .

We can now examine how an income tax and a general sales tax affect the choice between consumption in two periods, given the amount of income earned in the first period.

**Sales Tax (Tax on Present and Future Consumption)** - A tax on present and future consumption does not affect the choice between consumption in the two periods. The same rate of tax  $EA/OA$  is applied to consumption in both periods. The price line shifts parallel to the left as shown by  $EF$ , and the new equilibrium is at  $G$ . The government now collects  $GH$  of period 1 consumption in period 1, and  $HC$  of period 2 consumption in period 2.  $HC$  is equivalent to  $HI$  in terms of period 1 consumption, and  $GH$  plus  $HI$  is equivalent to  $EA$ . Both period 1 consumption and period 2 consumption are reduced by the income effect. There is no substitution effect. Given our assumptions about the shape of the indifference curve,  $G$  must be below and to the left of  $C$ .

**General Income Tax (Tax on Wage Income and Interest Income)** - The general income tax is a composite of a tax on wage income and a tax on interest income. In our two period model, interest income is received only on the part of work income not consumed in the first period. The tax on interest income could be replaced by a tax on savings then. This is the approach to income taxes which lead to the debate on "double taxation of savings" mentioned previously. The effects on present and





future consumption of the two parts of the general income tax will be considered separately and then combined to determine the final result.

A tax on wage income taken by itself, does not affect the choice between present and future consumption. It is the same in this respect as a tax on present and future consumption. If the tax rate equals  $EA/OA$ , disposable income of the first period is reduced to  $OE$ . The terms on which present and future consumption may be exchanged for each other are not affected, as the effective interest rate stays the same. There is no substitution effect, only an income effect.

A tax on interest income is very different. In Figure 2,  $OH$  is the consumption which could be had in the second period, if the interest rate was zero and there was no consumption in the first period.  $OJ$  and  $OA$  are thus equal.  $OB$  is the consumption which would occur in the second period with a positive interest rate ( $i$ ) and no consumption in the first period. Interest income is then given by  $BJ$ . A tax on interest income is assumed to apply at the rate  $BK/BJ$ . A new price line results with a slope differing from that of  $AB$ . If a choice is to be made between present and future consumption, a tax on interest income thus changes the terms on which the decision is made.

Alternatively, a tax on interest income can be thought of as changing the interest rate. With no tax, savings ( $S$ ) in the first period will support consumption of

$$(1 + i) S$$



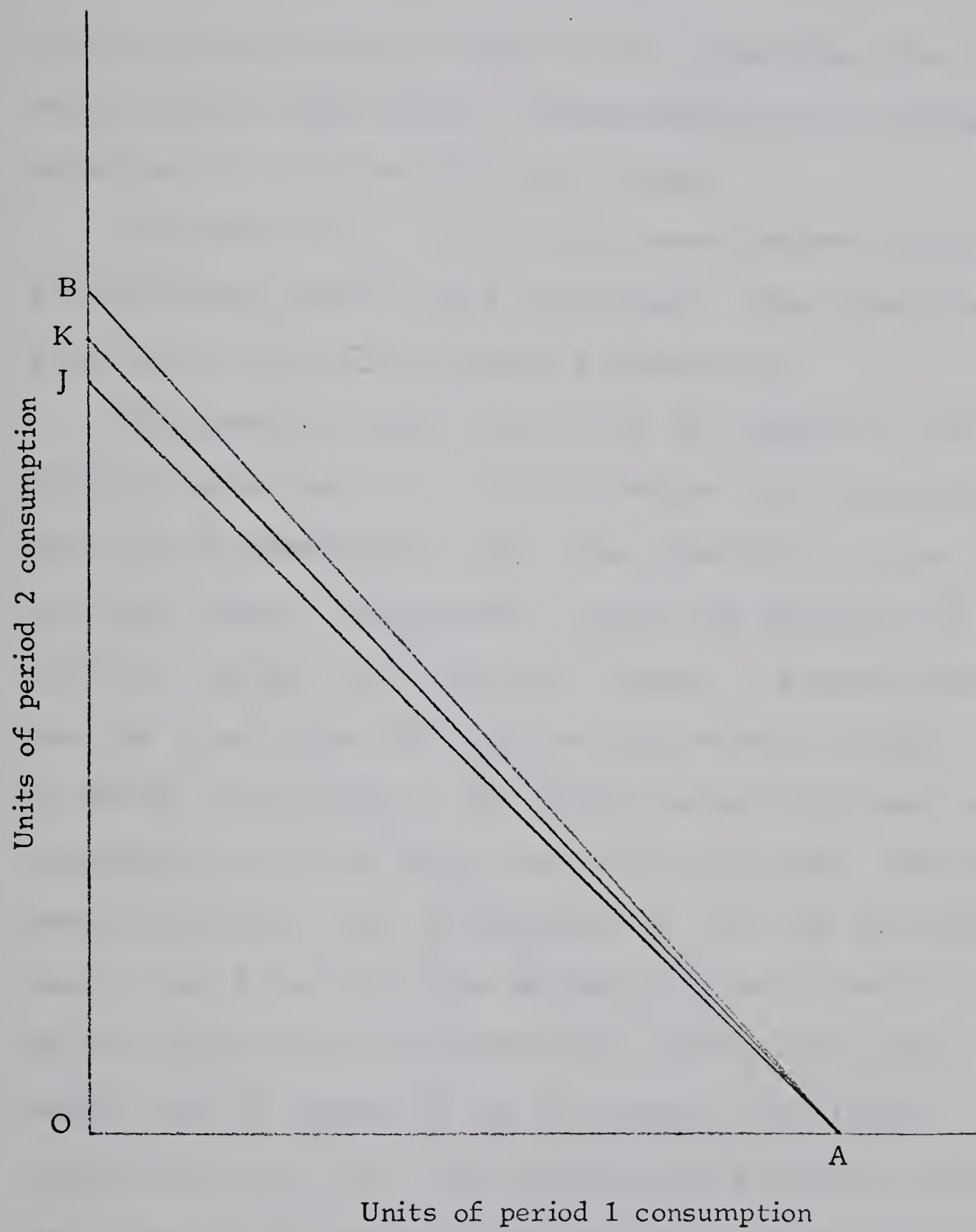


FIGURE 2



in the second period. When a tax ( $t^1$ ) on interest income applies, savings in the first period will only support consumption of

$$1 + i (1 - t^1)$$

in the second period. Again it is clear that the terms on which present and future consumption may be exchanged are affected by a tax on interest income.

In the case of a tax on interest income, both income and substitution effects will be present. The substitution effect will be in favour of present consumption.

The general income tax is to be compared to an equal yield general sales tax or a tax on present and future consumption. The tax on work income alone was identical to the tax on present and future consumption. With the addition of the tax on interest income the situation changes. Remembering that yields must be equal, the rate of the tax on work income is lowered to NA/OA in Figure 3. The choice between present and future consumption is made along the price line MN. The additional yield necessary, EN, is produced by the tax on interest income. For a tax of yield EA, MN intersects EF at a point where MN is tangent to an indifference curve. The rate of the general income tax is chosen so as to produce this result. The new equilibrium is at P. The position of P must be below and to the right of G, the equilibrium for a tax on present and future consumption. This follows from the substitution effect of the





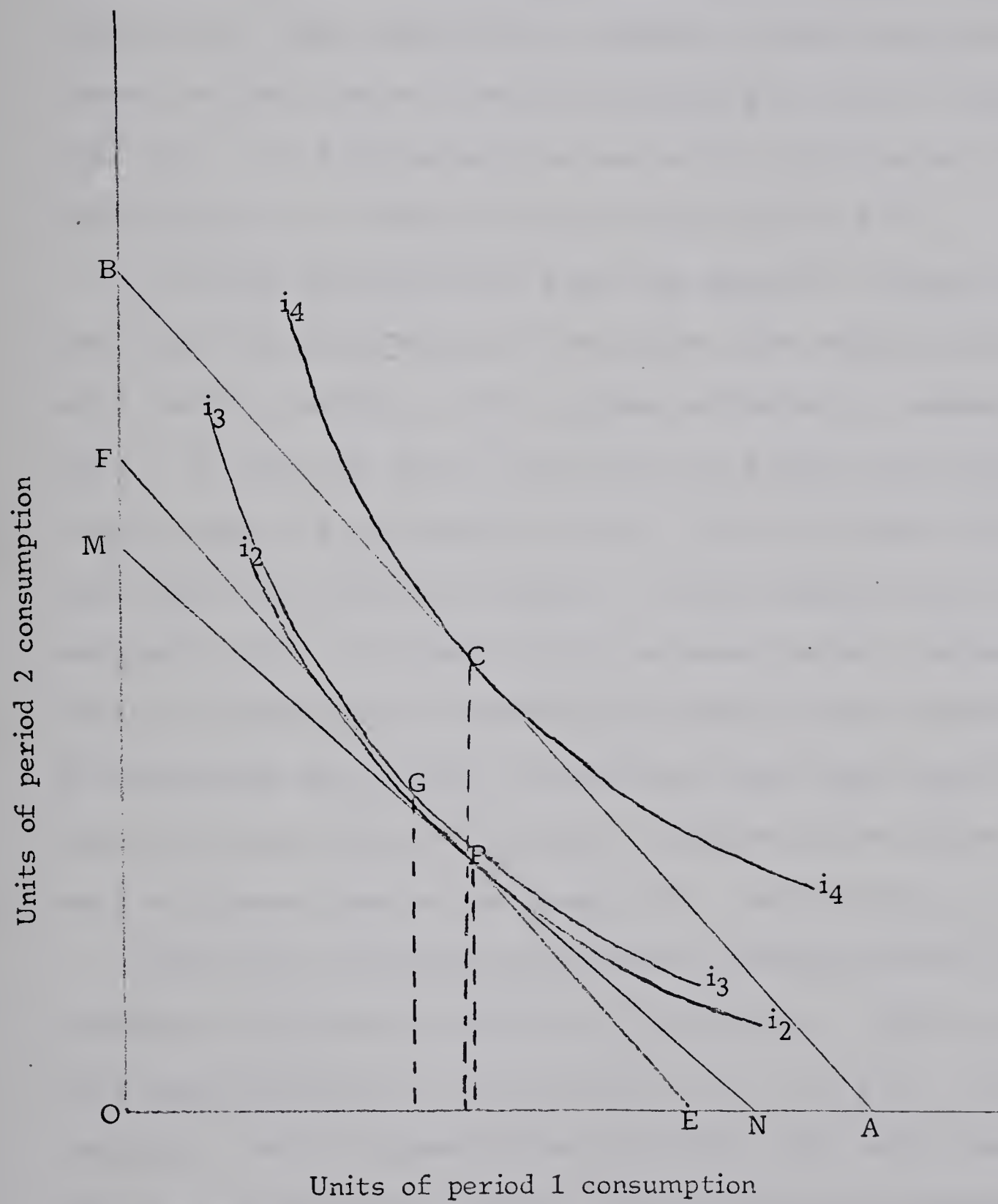


FIGURE 3



tax on interest income and the assumed properties of our indifference pattern.

There will thus be a tendency for larger consumption expenditures to occur when an income tax is used rather than a sales tax. This will be the result of the substitution effects caused by the tax on interest income portion of a general income tax. If the income tax was more progressive than the sales tax, this effect would be even greater.<sup>19</sup>

If some householders save not only for future consumption but also for perpetual accumulation, the substitution effects will favour saving at the expense of present consumption even more. We are now faced, even in the simple case discussed above, with a preference surface. The relative effects of the two taxes are now more complex. They depend upon the taxpayer's marginal rates of substitution between future consumption, and present consumption, accumulation and present consumption, and accumulation and future consumption, and upon the way in which the two taxes affect the rates at which these three alternative uses of income may be exchanged for each other.

The tax on present and future consumption will now discriminate in favour of future consumption. There will also be a substitution of accumulation for saving for future consumption. With accumulation included, the sales tax will include a substitution effect, but it will be favourable to saving.



A Tax on wage income continues to have no substitution effect. However the tax on interest income which previously was found to discriminate against savings for future consumption, also discriminates against accumulation in favour of both consumption and savings for future consumption. The negative substitution effect on saving caused by a general income tax will thus be reinforced.

When this analysis is expanded to include the total population, certain other considerations arise. We have previously discussed the tendency for the two taxes to be paid by individuals with different marginal propensities to consume, and the effect of this on the proportion of income saved and consumed. Translated into the present context, this means that the income effects of the two taxes would not necessarily be equal for a single individual. The sales tax would cause larger income losses for the lower income groups than an income tax would. Since the shape and position of preference patterns may vary among different income groups, equal yield taxes for a group will produce different results than the sum of equal yield taxes for each individual. The same possibility is inherent in the various substitution effects.

#### The "Pigou Effect"

One further effect exists which might give some advantage to the sales tax in reducing consumption. E. Cary Brown has suggested that:

"Higher prices induced by consumption taxes would reduce the value of real wealth (given a constant stock of money.)"





If consumption depends on real wealth as well as real income, real consumption would fall.... This.... would work in favor of greater deflation from consumption taxes."<sup>20</sup>

The significance of this particular effect is very questionable. First, the quantitative importance of real balance effects is unknown, and may be insignificant. Second, the assumptions on which Brown bases this conclusion seem to be inconsistent. If the money supply is not increased, prices cannot rise, unless the velocity of money increases. There is no a priori reason to expect this to occur, although it might. If the supply of money is expanded, real balances will not have fallen. The process of increasing the money supply will have increased the prices of bonds and other sources of wealth.

The "Pigou" or "real balance" effect does not appear likely to give any additional advantage in reducing consumption to sales taxes over income taxes.

#### A Temporary Tax

A temporary sales tax could be a very powerful instrument of fiscal policy. The sales tax is paid at the time of purchase of a good, and thus is directly associated with the purchase. It is obvious to the buyer the amount that could be saved by delaying the purchase until the tax is lowered or removed. Use of temporary sales taxes could thus be a powerful means of directing the time pattern of consumption.



The potentially powerful substitution effect of a temporary sales tax can be illustrated graphically.<sup>21</sup>

The temporary sales tax increases the rate at which future consumption may be substituted for present consumption. We again choose a tax which is to yield EA in terms of period 1 consumption. Referring to Figure 4, the required rate is  $NA/OA$  set so that the price line BN intersects EF at a point where BN is tangent to an indifference curve. The tax yield is as required and the new equilibrium is at P. Since there is a substitution effect adverse to period 1 consumption, P must lie above and to the left of G. P must also lie to the left of the pre-tax equilibrium C, because of the reduction of period 1 consumption as a result of the tax.

The effect of a temporary sales tax may also be stated as a change in the effective rate of interest. In our two period case, the effective rate of interest rises from  $i$  to  $(i + t)/(1 - t)$ .<sup>22</sup> With a market rate of interest of 5 percent and a tax rate of 25 percent, the effective rate of interest becomes 40 percent. This is a considerable higher rate of interest than any practical monetary policy could achieve, and might be expected to produce strong pressure on consumers to delay expenditures.

#### Work Effort

An advantage often claimed for the sales tax as compared



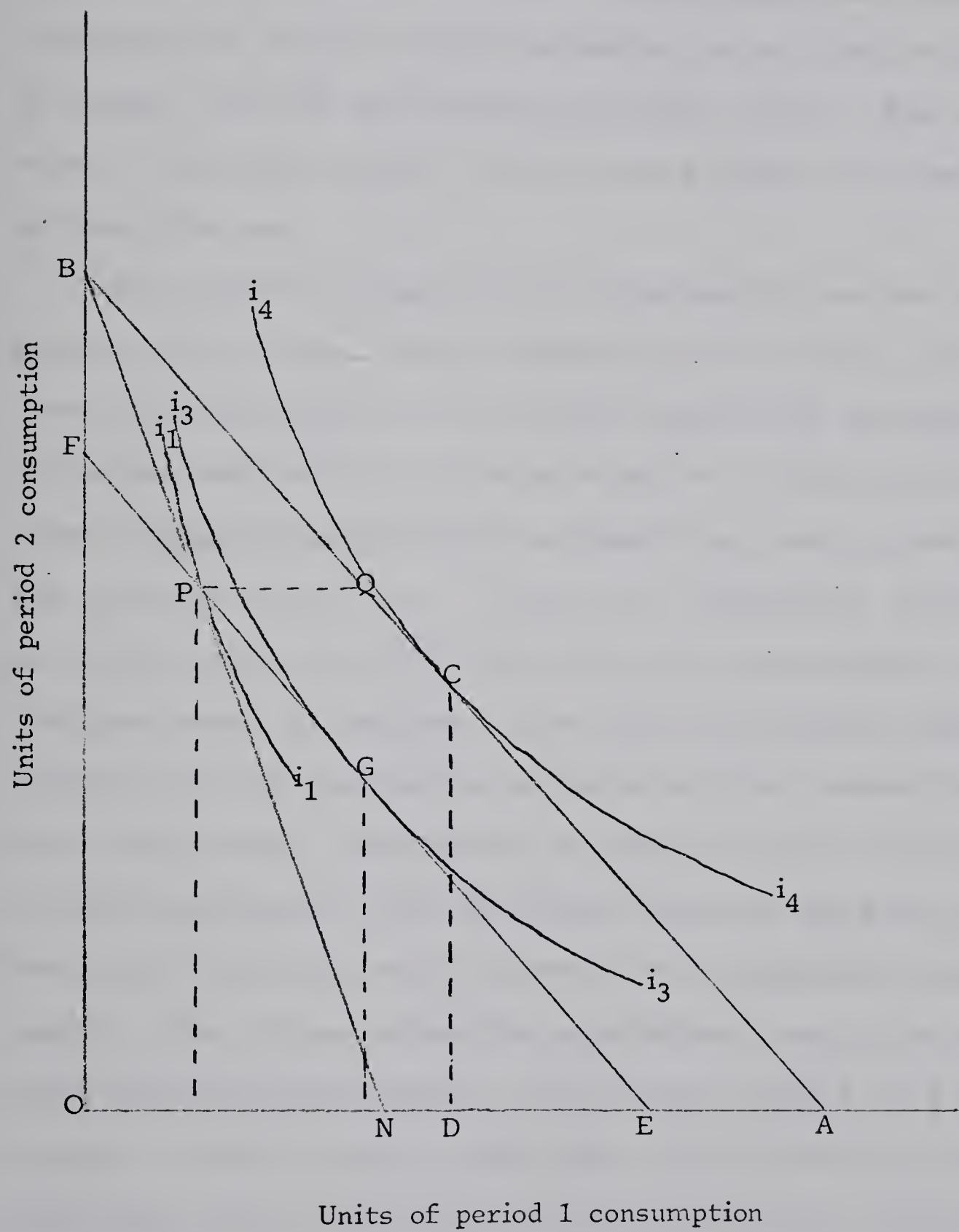


FIGURE 4





to the income tax is based upon considerations of relative effects upon incentives to work. Authorities on the subject tend, however, to be very cautious in attributing too much significance to this point.<sup>23</sup> This section considers the differential impact on the incentive to work of an increase in income tax and an increase in sales taxes. The assumption, unless otherwise stated, is that work effort can be measured by hours worked.

One qualification to the following discussion should be noted at this time. When considering the effect of various taxes on work effort, it is often implicitly assumed that increased work effort is to be desired. This is definitely true for war-time when this argument has been presented and has received attention. It must be remembered, however, that in general greater work effort does not necessarily lead to a higher level of welfare. The usual assumption that it does, follows from the exclusion of leisure from conventional measures of income. Efficiency in budget policy really refers to noninterference with the choice between work and leisure. When other factors such as growth are considered, however, it appears that of two otherwise equivalent taxes, the one which discriminated least against work effort should be given preference. This is not to deny that in a situation where one tax caused an extreme distortion in the choice between work and leisure, another tax, with a smaller positive effect on



the incentive to work, might be more desirable.

As is generally acknowledged, taxation may influence the amount of work undertaken in two ways. First, by lowering the amount of income available, a tax makes it necessary to work more to make up for the lost income. This is the "income effect." Second, the reduction in the rate at which leisure can be converted into income, will make it desirable to exchange some work income for leisure. This is the "substitution effect." Under assumptions of declining marginal utility of income and leisure, the substitution and income effects work in opposite directions.<sup>24</sup> In the absence of information on preference patterns, there is no a priori reason to predict that either tax will affect work effort either positively or negatively.

The very possibility of adjusting time worked has often been questioned because of institutional considerations.<sup>25</sup> There are only limited possibilities for a worker in an industrialized state to determine privately the amount of time which he will work. Certain professional and business people do have it within their power to decide on the effort to be extended, but these individuals are usually described as being motivated by non-pecuniary considerations.<sup>26</sup>

Other writers have cautioned against overemphasizing the absence of opportunities to exchange work for leisure. It seems likely that, except in the short-run, there is still



considerable leeway for the individual to vary his work effort. Kaldor has indicated the possibilities of varying the amount worked over longer time periods as follows:

"A wage-earner can vary the amount of his work when he is remunerated to some piece-rate or when he can do overtime; he can accelerate or retard his promotion both by the effort he puts into the job, and the effort required to acquire additional skill or qualifications. Within limits he can choose between alternative employments requiring more or less work or effort for greater or lesser pay. Within limit he can take shorter or longer holidays, retire earlier or later, or simply be voluntarily unemployed for a shorter or longer period between jobs. Finally, the normal weekly hours worked in any particular industry themselves reflect, over a longer period, the collective choice of the workers as to hours of work and leisure, since these hours are fixed by agreement between the employers and trade unions.<sup>27</sup>

One might add to these, the possibilities that the employee may hold more than one job or that other members of his family may seek employment.

Of course, it is probable that, a tax increase would tend to have its most significant effects on work effort in the short run. The initial impact of the tax would produce the greatest desire to readjust the hours worked. If this could not be done, the desire might fade away somewhat as the tax became accepted. If workers were incensed enough about the tax, however, they could cause actual work effort to decrease without altering the number of hours worked. In such a situation, our assumed measure of work effort would no longer be valid, and many complexities would enter any attempted analysis.

The above analysis would seem to indicate that there are







enough ways for an individual to exchange work for leisure to make a study of the effects of the two taxes on work effort worthwhile.

#### Equal Yield Taxes on Individuals

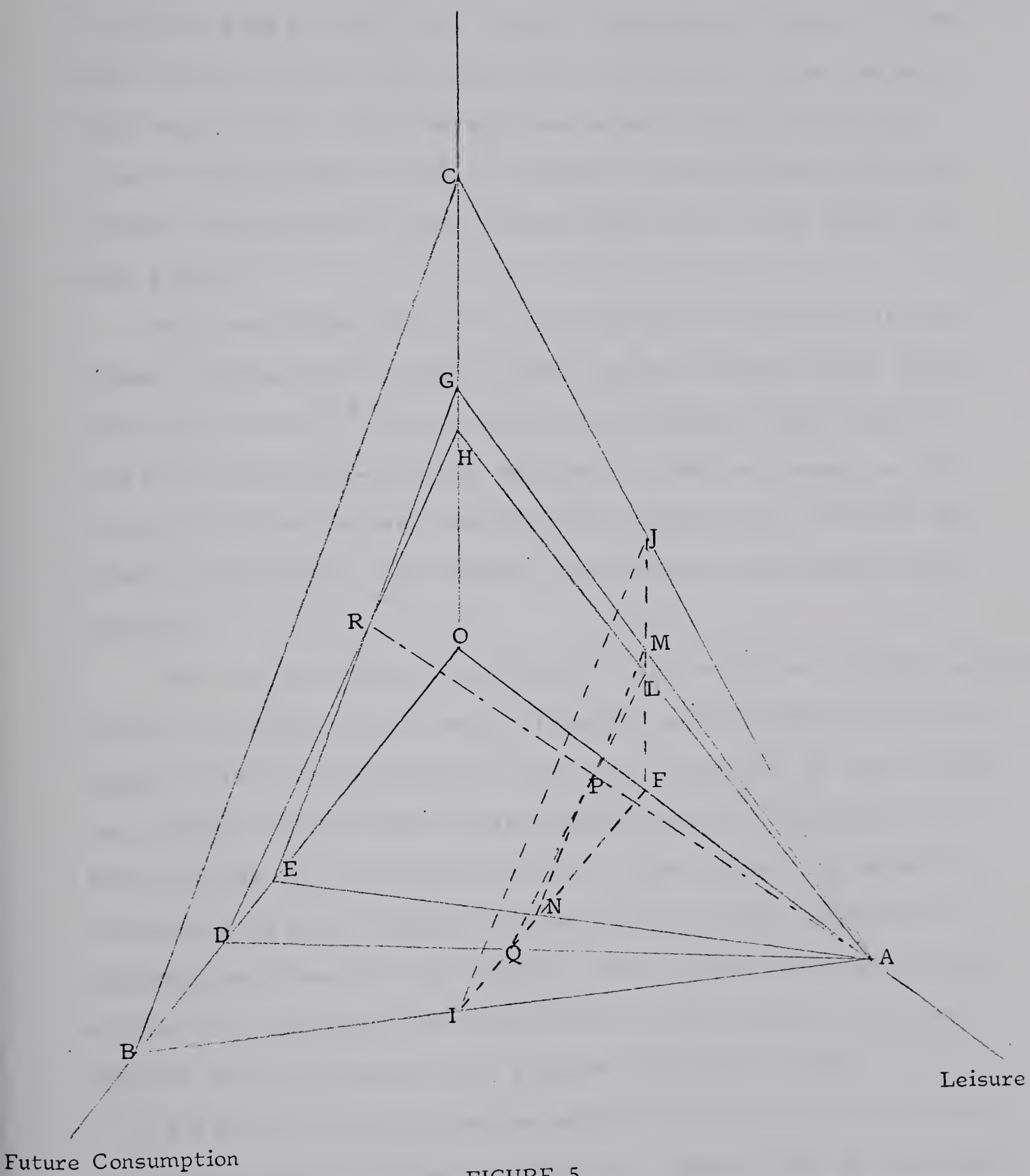
Originally we will consider the differential effects of a general sales tax and a proportional income tax, when an individual is required to pay equal amounts under both levies. We shall assume that all income is from work and that the labour input may be measured in terms of hours worked. Also there are no institutional barriers to stop an individual labourer from adjusting his labour input.

The individual shall earn his total income in the first period, and divide this income between present and future consumption. This is the case of a man earning in one period to retire in the next.

In Figure 5, the price surface ABC indicates the various alternative choices among leisure, present consumption, and future consumption. The total allotment of time is OA, which can be divided freely between leisure and work. If FA is sacrificed leisure or work, then OF is retained leisure.

If work effort is fixed, say at FA, this reduces to the case discussed above under consumer spending effects. With a variable supply of work effort, three dimensions are necessary to illustrate the situation geometrically. Originally







the price surface ABC will touch a preference surface at the point which produces the optimum allocation of time between work and leisure, and consumption between the present and future time periods. Let us retain the assumption that the optimum allocation of time occurs where FA is the amount of work effort.

With the imposition of a tax new price surfaces are obtained. These will be AGE or AHD for an income tax or sales tax respectively.<sup>28</sup> The relative positions of the two surfaces are determined by the effects of the two taxes on the choices between leisure and present consumption, leisure and future consumption, and present consumption and future consumption.

The tax on income discriminates in favour of leisure against present consumption and more strongly so in favour of leisure against future consumption. The discrimination of the income tax against present and future consumption is indicated by the pivoting of the surface from A. The income tax also discriminates against future consumption in favour of present consumption, that is the slope of GE exceeds the slope of CB, as does the slope of any price line on the income tax price surface that is produced by a plane parallel to OBC.

A sales tax discriminates against both present and future consumption and in favour of leisure. Again this is indicated by the sales tax causing the price surface to pivot from A.





The sales tax is neutral as to the choice between present and future consumption, however. EH is parallel to CB, as are any of the other price lines in planes parallel to OBC.

The cross-section JIF with work effort fixed at FA is equivalent to AOB in Figure 3. As we see, the equilibrium with an income tax would occur at P and it would be on a lower indifference curve than the equilibrium with a sales tax. The line AR indicates the equilibrium point with an income tax as work effort is moved to other fixed levels. In every case, the income tax will produce an excess burden.

The purpose of developing the position of the price surfaces produced by the taxes is to attempt to predict the effect of the taxes upon work effort. The work effort expended will now almost certainly be different from FA. The problem is to determine which tax will increase work effort the most or will cause it to decline the least.

Now at this point it is tempting to suggest that because there is an excess burden with the income tax, work effort will be less.<sup>29</sup> This, however, is using a concept of excess burden developed for fixed work effort. It clearly does not apply here. Actually the determining factor as to which tax will have the greatest positive or smallest negative effect on work effort is the shape of the preference schedules. If future consumption and work are complementary, while present consumption and work are rival, work effort (income) will be



associated with higher future consumption.<sup>30</sup> When these relationships are reversed, an income tax will have a less harmful effect on work effort.

It is very difficult to predict which of these forms the preference pattern will take, even in the simple two period model discussed above. When a number of time periods are included, and the possibility of accumulation for its own sake is admitted, the likelihood of ascertaining that one of the taxes will have a more desirable effect on work effort purely on a priori grounds, becomes very unlikely.

Kaldor has suggested a possible reason for work effort being greater under a consumption based tax.<sup>31</sup> If the tax rates are the same, an individual will work more with a consumption based tax because of the better terms at which leisure may be exchanged for future consumption. Counterbalancing this advantage, however, is the requirement that the tax rate for consumption taxes be higher to produce yields equal to those for income taxes. Kaldor then assumes the advantage of better terms will be exactly negated by the requirement of higher tax rates.

Kaldor feels that a reason can be given, however, which establishes a definite presumption in favour of a consumption-based tax.

"The advantages of possessing saved-up resources do not consist solely in their being a fund for future consumption, but in the security they afford to the owner



in case of emergencies, in putting the owner in a favourable position to exploit chance opportunities in the future, in the prestige value they confer and so on. For all these reasons the possibility of saving up resources out of current earnings tax-free is valued for its own sake quite apart from the increased consumption resulting from the savings. If a man can set aside the whole of his earnings from additional work he will therefore regard that as more valuable than if he can only set aside his earnings less the marginal tax on it - even though in the latter case he will save just as much in future taxation (in terms of the present discounted value) as he saves in current taxation in the former case."<sup>32</sup>

This would appear to be true only insofar as the individual is subject to money illusion. If he is fully cognizant of the higher price which must be paid for any purchase in the future, this should not have any importance.

#### Progressive Taxation of the Individual

Taxes of Unequal Progressiveness - In ordinary circumstances, sales taxes are likely to be more regressive than an equal yield income tax. This will occur not only because an income tax is unlikely to have a rate structure equivalent to that of a sales tax, but also because average propensities to consume decline as income levels increase.

An individual's work effort will be greater as a tax becomes less progressive. Musgrave states that:

"When a proportional tax reduces work effort, a progressive tax of equal yield reduces work effort further; and when a proportional tax increases work effort, the increase is less under a progressive tax. By the same reasoning it may be shown that a regressive tax leaves us with a higher level of work effort than a proportional tax of equal yield."<sup>33</sup>







The less progressive tax by definition will have a lower marginal rate, and thus the substitution against work effort will be of less significance.

The possibility that the high marginal rates of a progressive income tax will discourage work effort is the most convincing argument supporting the contention that sales taxes are less harmful to the incentives to work. The introduction of income taxes to produce the equivalent distribution of burden may be politically infeasible. There must be a decision made on the trade-off of the most equitable tax structure for one less adverse to work effort.

**Equally Progressive Taxes** - Assume for the moment that both taxes can be made equally progressive. This, of course, cannot be done with a sales tax, but it is possible with an expenditure tax. This assumption is necessary to discuss two additional points raised by Kaldor. As we have seen, the likelihood that in a real situation the sales tax would be more regressive only strengthens these arguments.

A progressive income tax discriminates against an individual who earns his income irregularly; while a progressive consumption tax discriminates against an individual who spends his income irregularly. Since expenditures do not vary as much as income, this discrimination will be more important with an income tax. As Kaldor suggests:

"If a man is taxed more heavily when he works at an irregular rate in time than when he works at a regular



rate, he will, on that account, not only tend to work more regularly, but to perform a smaller total amount of work than he would be tempted to perform if he were equally taxed in the two cases."<sup>34</sup>

An income tax falls into the category of taxes that discriminate against individuals whose work efforts are irregular.<sup>35</sup> Provisions for averaging of income would do much to alleviate this problem.

There is an assumption underlying the above analysis which Kaldor does not make explicit. If work effort is irregular, a progressive income tax will have an additional source of yield because of the irregularity. This is a yield advantage above and beyond that of a wider tax base, and will allow an even greater rate advantage for the income tax. The individuals who work regularly will pay lower taxes, while those who work irregularly will pay a larger portion of the total tax bill. Thus the underlying assumption is that the individuals whose work effort is variable will be more responsive to the discrimination against them, than the other group are to their tax advantage. The group with variable work effort are likely to consist mainly of high income professional and business people, while the other group is composed of workers with lower incomes. The assumption would appear to be quite reasonable, unless the professional group are largely motivated by non-pecuniary considerations, while the second group pay some attention to tax rates when making long-term decisions on the amount of work to be performed.



If the individual has perfect knowledge and views the situation rationally, the above considerations would apply only for yearly periods. There is an interesting situation, which might be called a "tax illusion," where the effect of progressive income taxes on work effort would assume importance within a yearly period. Individuals, with a seasonal work pattern, put in long hours during peak season, and if taxed on a weekly basis may pay a fairly high marginal tax rate. When this is translated into a yearly basis, a much lower rate actually applies. However to the extent that the high weekly rate is thought to be the real one, work effort will decline.

Progressive Taxation and Retirement - Certain special considerations apply when savings are intended to be used after retirement. During retirement years, work income will be zero and expenditures are traditionally lower than in other periods of life. To what extent this is an illusion, dependent upon the treatment of consumer durables, is unknown. When consumption at this time is subject to a lower tax rate, additional work effort in order to provide a larger fund of savings for this period will be attractive.

There may also be a "tax illusion." Kaldor suggests that an exaggerated weight may be given to the non-taxable savings available under a consumption tax.<sup>36</sup>

People may base retirement plans on obtaining a certain pool of funds. This pool would be accumulated more rapidly with a consumption tax. In this case, work effort would be







reduced because of earlier retirement. On the other hand, retirement age is often fixed by custom or contract. Also a larger fund of savings can be obtained by additional work when a consumption based tax applies. Again it is difficult to decide on a priori ground which of these opposing forces will be strongest. Underlying the above discussion is the assumption that consumption after retirement will be taxed at a lower rate than is the case with the income tax. This is true with a progressive tax. If yields were equalized, however, the consumption tax rate would have to be raised. Although Kaldor considers the matter of rates needed to produce equal yields, he does not indicate its significance with regard to retirement plans.

#### Work Effort of a Group

The discussion to this point has considered the effect of taxes of equal yield upon an individual receiving all income from work. The results suggested that, for such an individual, the sales tax will have some advantage over the income tax, especially when the income tax has a more progressive rate structure. It would be convenient if determination of the effect of the taxes on work effort of a group could be obtained by addition of the individual results, but such summation is illegitimate. In fact, when groups are considered, it is very difficult to reach any conclusions whatsoever.



In discussing the effects on an individual much of the advantage of the sales tax arose out of the likelihood that the rate structure of it would not be as progressive as that of an income tax. This advantage may not exist when we move to a group. The response of any individual to a tax will depend mainly on its absolute level, and only to a limited extent on whether the rate is rising or falling. Assuming that the rates have been adjusted to produce equal yields, Figure 6 presents the relationship between tax rate and income levels for the two taxes. The income tax is assumed to be progressive, the sales tax somewhat regressive. At low income levels, the regressive tax will have higher average and marginal tax rates. The opposite will be true at high income levels. In middle income brackets, the sales tax will have lower marginal but higher average rates than an income tax. Other combinations are also possible in the middle income levels.

At the extremes work effort may either increase or decrease. The result will depend upon the preference patterns of the groups.

The direction of change in work effort by the upper and lower income groups, in response to a new tax, may be opposed. Thus the high income group may increase work if a switch is made to a higher tax rate, because the income effect is dominant. The substitution effect might be dominant in the lower income brackets, and work effort would decrease. The opposite situation



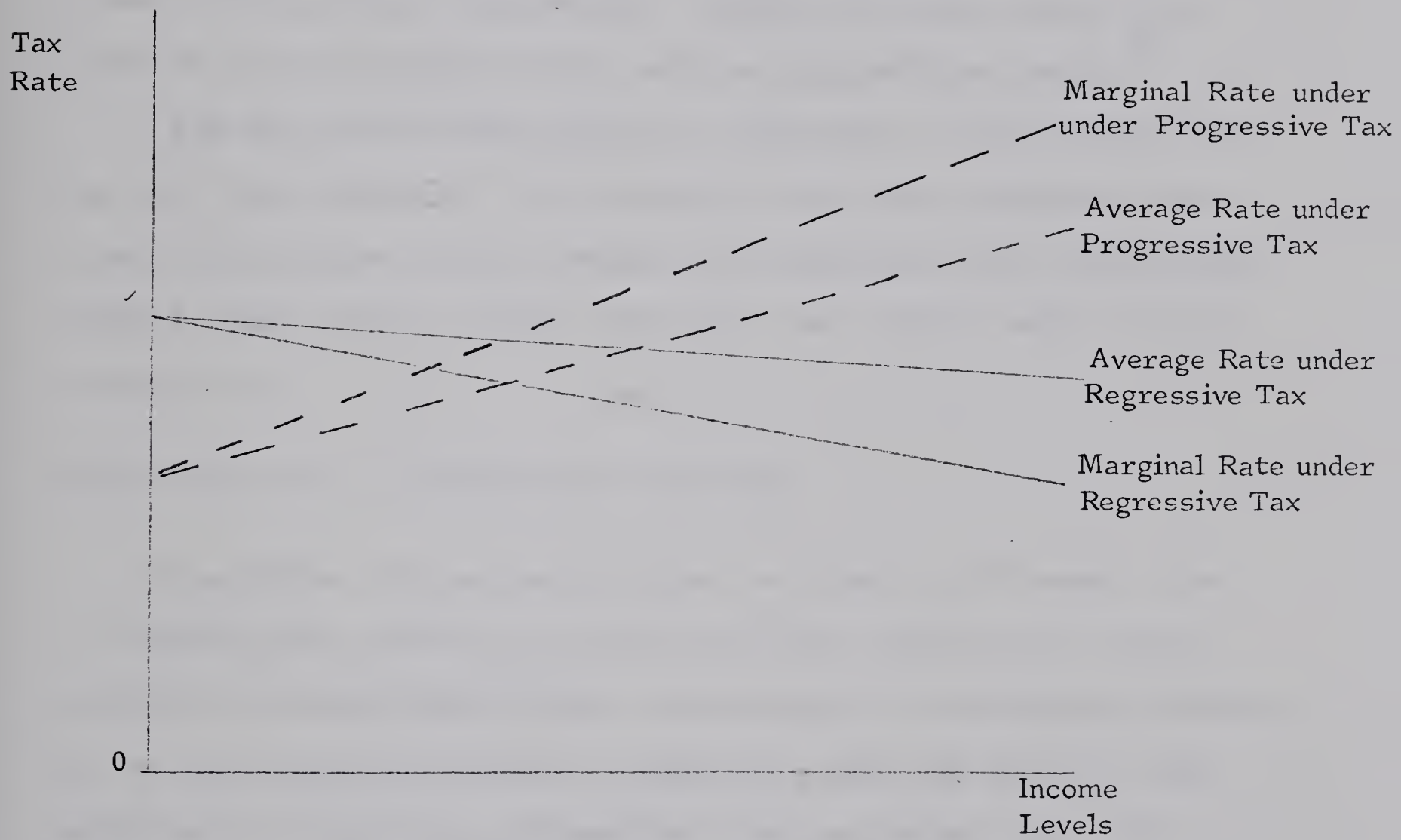


FIGURE 6





is also possible.

In the middle income brackets more definite conclusions can be reached as to the direction in which work effort will change in response to adjustments in marginal and average tax rates.<sup>37</sup> In total, however, it is very difficult to reach any decision on the effects on work effort, when groups are involved. The difficulty of moving from an individual to a group is not always considered. Kaldor discusses only the case of an individual in his book on expenditure taxes.<sup>38</sup>

The one point which might be important at the group level is the "tax illusion." If people do not fully recognize the tax liability due, when savings are converted into consumption, then to that extent income and extra work effort will be more attractive.

#### Work Effort in a Compensatory Setting

The above discussion pertains to equal yield taxes. In a compensatory setting, the more relevant concept is a comparison of taxes which reduce consumption by equivalent amounts. As we have seen previously, a general sales tax will be more efficient in reducing consumption than an income tax. The yield necessary to remove an inflationary gap will be less with the sales tax. If equal yield taxes have an equal adverse effect on work effort, then the sales tax will have an advantage in a compensatory setting, because a lower tax rate is possible.

If a tax is intended to be a temporary measure, the sales



tax has an additional advantage. Present income, which would be taxed at a higher rate during an inflationary period with an income tax, can be saved to be spent in a low tax period under a sales tax. This would obviously be advantageous during war-time. Not only would it make work effort more attractive, but judicious choice of the time to remove the tax would be an aid in combatting the deflationary tendencies which often arise as an aftermath of war. A refundable income tax or compulsory lending can perform much the same functions. The treatment of interest would then be the only difference in regards to incentives. Even this difference of the two taxes would be negated, if the government paid interest on the refundable portion of the income tax. A refundable tax would have the added advantage of reducing liquidity immediately after the war, if its return was made subject to a policy decision.<sup>39</sup>

#### Partial Tax on Consumption

The discussion to this point has assumed a general sales tax with effects on work effort equivalent to those of an expenditure tax. The usual sales tax is not completely general. Certain goods are exempted in order to minimize the problems with equity inherent in the tax. The question then arises as to what effect partial coverage will have upon work effort.

Assume a simple situation, where all income is spent upon



two goods X and Y. Let X be the goods which are exempted from the tax and Y be taxed goods. The tax will then discriminate in favour of leisure compared to Y. Also, the tax discriminates in favour of X compared to Y, remaining neutral between X and leisure. The results now depend on the rates of substitution among X, Y, and leisure.

The items exempted from sales tax are presumable necessities. Little has suggested that since luxuries and leisure are likely to be associated, a tax on luxuries will be less of a disincentive to work effort than a tax on necessities.<sup>40</sup> Therefore a partial sales tax will be a lesser disincentive to work effort than a general sales tax. In terms of our model, X is rival to leisure, while Y is complementary to leisure, and work effort will thus be greatest with the tax on Y.

### Price Effects

At the simplest level, the effect of a sales tax upon price levels might be regarded as somewhat of a paradox. How can a tax which raises the price level combat inflation? The answer, of course, is that the price increases associated with inflation and with the imposition of a sales tax are fundamentally different. Inflation is a continuing process, price increases setting in motion reactions, which induce further price increases, followed by reaction, etc. A sales tax, on the







other hand, produces a single price increase, which by reducing purchasing power and thus effective demand will actually aid in breaking an inflationary spiral. But will not a price increase resulting from imposition of a sales tax spark the same inflation inducing reactions as any other price increase?

The suspicion that the answer to this question is a qualified yes, is the single most convincing argument against counter-cyclical use of the tax.<sup>41</sup>

A demand for wage increases is likely to be one of the direct results of the imposition of a sales tax or an increase in the rate structure of an existing tax. Since the basic difference between an inflationary price increase and a sales-tax induced price increase is that in the latter case factor prices do not rise, the tendency, to wage increases will defeat the purpose of the tax. Sales taxes enter into the prices used to compute consumer price indexes. In industries with escalator clauses, an automatic wage increase will result. In other industries, the increased living costs and the example of higher wages elsewhere will create great pressure for wage increases. In the case of income tax increases, there may be demands for higher wages, but these are not likely to be either automatic or as defensible during bargaining.

In theory, the sales tax could be excluded from the cost-of-living index, but in practice this is likely to be almost impossible to do. Groups which have their wages or prices



tied to an index will naturally be strongly opposed to any changes in it. Organized labour and farm groups are likely to be especially vocal in this regard. There would also be objections from those who wish to preserve the integrity of the index.

A temporary surtax might be excluded from the cost-of-living index much more easily than the entire tax. If the surtax was definitely temporary, opposition to its exclusion would be less out-spoken.

The composition of the index can also be significant. If certain items, such as food, which are excluded from the sales tax base, are given heavy weight in the index, then the cost-of-living index will not reflect fully the rise in the cost-of-living emanating from the tax increase. This is likely to be the case and will have some dampening effect upon the ability of labour to obtain higher wages either automatically or by bargaining.

The incompatibility of a sales tax imposition or increase with price and wage controls is generally accepted. This would appear to be one of the major reasons for the United States rejection of a sales tax during the Second World War.<sup>42</sup> If prices were allowed to rise to accomodate the tax, firms previously frustrated by the price controls could use the opportunity to actually increase prices net of the tax. The presence of producers' goods in the tax base would produce



especially acute problems, through pyramiding of the tax. Extra pressure in the face of price increases would be directed at wage guidelines, and might be enough to overthrow the complete system of wage restraint. Obviously this would be too high a price to pay for the additional control of inflation which would result from use of sales taxes.

Another problem arises from the likelihood that at least some tax will be paid on goods entering into production. The taxation of such items as capital equipment should not occur, but in practice is difficult to avoid. To the extent that some tax payments enter into the costs of business firms, the tax will be pyramided, not only distorting production and distribution, but also adding to the inflationary pressures generated by the the tax.

### Conclusions

Sales taxes have a considerable advantage over income taxes in reducing and delaying consumption expenditures. The sales tax probably has some marginal advantage by being less disruptive of work effort than income taxes. Income tax increases, however, are much less likely than sales tax imposition to result in a round of wage increases.

Emergency imposition of a sales tax in wartime or in some other unusual circumstance appears very risky. There is always danger that the tax will become a permanent feature of tax system.







Also wage increases are likely to thwart any advantages gained through reduction or postponement of consumption. The danger is especially great where wage and price controls are in effect.

The situation which would prevail in Canada should the federal sales tax be moved to the retail level, is very different. The justifiable fear of an emergency tax becoming permanent will obviously not apply. There would be the danger of a temporary rate increase becoming a permanent one, but is difficult to see why this could not be guarded against in the legislation. As we have seen, a temporary tax will be especially effective. Its effect on consumption will be considerable, while it will be easier to avoid the factor price increases which may outweigh the advantages in other situations. In the light of the above, discretionary use of the tax appears quite attractive, and worthy of closer study.



# NOTES

<sup>1</sup>Kaldor defines economic efficiency as the "net expenditure - restraining effect of a tax." Nicholas Kaldor, An Expenditure Tax (London: Allen and Unwin, 1955), p. 177.

<sup>2</sup>George F. Break, review of An Expenditure Tax, by Nicholas Kaldor, in Economica, XXIII (May, 1956), p. 177.

<sup>3</sup>For a defense of the concept of economic efficiency, see Amotz Morag, Taxes and Inflation (New York: Random House, 1965), pp. 46-58.

<sup>4</sup>See R.A. Musgrave, The Theory of Public Finance (New York: McGraw-Hill, 1959), pp. 449-450; and E. Cary Brown, "Analysis of Consumption Taxes in Terms of the Theory of Income Determination", American Economic Review, XL (March, 1950), pp. 74-89.

<sup>5</sup>The following symbols are used in the model:  $Y$  = measured national income;  $Y_0$  = net national product at factor cost, assumed to be full employment income at a given price level.  $C$  = consumption expenditures;  $I$  = investment;  $G$  = government goods and service expenditures;  $a$  = Consumption expenditures at zero income;  $0 < b < 1$  = marginal propensity to consume;  $t_y$  = income tax rate;  $t_c$  = sales tax rate (consumption tax rate).

<sup>6</sup>The equilibrium condition is  $S + T = I + G$ . For  $T = I + G$ , obviously savings must be zero.

<sup>7</sup>John F. Due, "The Sales Tax as an Anti-Inflationary Measure," Public Finance, VI (December, 1951), p. 386.

<sup>8</sup>Daniel C. Morgan, Jr., Retail Sales Tax (Madison: University of Wisconsin Press, 1964), p. 37.

<sup>9</sup>Two studies which support this contention can be found in John F. Due, Sales Taxation (London: Routledge and Paul, 1957), pp. 25-26. Assuming that the sales tax is shifted forward to rest on the consumer, one study for 1947-48 shows progression to the \$3,550 - \$4,050 income class, while the other study for five major cities in 1953, shows a relatively proportional distribution of the tax. These studies apply to the Canadian Manufacturers' Sales Tax with food exempt. A highly regressive pattern emerges if all food is taxable.





<sup>10</sup> Milton Friedman, A Theory of the Consumption Function (Princeton: Princeton University Press for the National Bureau of Economic Research, 1957).

<sup>11</sup> Due, "The Sales Tax," p. 386.

<sup>12</sup> Harold Lubell, "Effects of Redistribution of Income on Consumers' Expenditures," *American Economic Review*, XXXVII (March, 1947), p. 158.

<sup>13</sup> "The increase in personal saving that would result from a reduction in the progressiveness of the income tax would likely be quite moderate. If those with incomes over \$8,000 save 25 percent of their after-tax income, the elimination of any progressiveness in the rates on taxable income, while preserving the same total personal tax burden would yield an annual increase in personal saving of about \$40 million. This would involve shifting some \$350 million of tax burden from the upper income to the low and middle income groups. Because the same amount of aggregate domestic saving could be achieved by an across-the board tax increase of \$80 to \$90 million, we conclude that reducing progression is an inefficient means of stimulating saving." Report of the Royal Commission on Taxation, Kenneth LeM. Carter, chairman (6 vols; Ottawa: Queen's Printer, 1966), Vol 2, p. 150.

Musgrave reaches the same conclusion, as he states: "the importance of the relationship between progression and division of the tax bill between consumption and saving is easily overstated." Musgrave, op. cit., p. 270.

<sup>14</sup> Due, "The Sales Tax", p. 386.

<sup>15</sup> The small amount of attention paid to the inequities within income groups caused by sales taxation is puzzling, considering the amount paid to the inequities which arise among different income groups. Such inequities are more difficult to eradicate than those due to differences in the distribution of burden among income taxes.

<sup>16</sup> John Stuart Mill initiated the debate on the double taxation of saving. The debate raged for over a hundred years, although it has recently been realized that much of the controversy could have been avoided by use of consistent definitions. See Kaldor, op. cit., pp. 79-81.

<sup>17</sup> Ibid., pp. 82-83.

<sup>18</sup> The presentation follows that of Musgrave. Musgrave, op. cit., pp. 259-263.





<sup>19</sup>"Where substitution effects are present, these will be accentuated if a given yield is obtained from any particular taxpayer under a progressive rate schedule. As noted before, the income effect is a function of the average rate of the tax, while the substitution effect is a function of the marginal rate. Under a progressive formula, the marginal rate is higher relative to the average rate than it is under a proportional tax." Ibid., p. 264.

<sup>20</sup>Brown, op. cit., p. 86.

<sup>21</sup>The presentation follows that in Musgrave, op. cit., pp. 263-264.

<sup>22</sup>In Figure 4, the effective rate of interest is given by the slope of NB minus one. If Y is income, the effective rate of interest is  $i^1 = \frac{(1 + i) Y - (1 - t) Y}{(1 - t) Y}$

<sup>23</sup>Due has concluded that: "On the whole, the sales tax probably has less adverse incentive effect than an income tax increase of the usual form, which does not alter exemptions, and raises marginal rates on the bulk of labor income. But there is probably little significant difference between a sales tax and an income tax whose burden is distributed in comparable manner among various income groups." Due, "The Sales Tax," p. 389. Even Kaldor in his book, which strongly supports expenditure taxation, is reticent in advancing this argument too strongly, in support of a consumption based tax. Kaldor, op. cit., pp. 130-140.

<sup>24</sup>If either income or leisure were inferior goods, the income and substitution effects would work in the same directions.

<sup>25</sup>Pigou subscribed to the viewpoint that institutional factors limit the elasticity of work supply. "With the great majority of people once their occupation is decided upon, the quantity of work which they do is only to a very limited extent within their control. Their hours are fixed by rule; the intensity of their efforts in many cases by custom and tradition; their age of retirement by pension arrangements." A.C. Pigou, A Study in Public Finance (London: Macmillan, 1928), p. 89.

<sup>26</sup>"Moreover in the higher walks of industry wealthy men in control of large concerns are often more interested in the success of their concerns as an index of capacity and a means of power than in variations in the amount of their private incomes, which in any event are ample." Ibid., p. 90.

<sup>27</sup>Kaldor, op. cit., pp. 131-132.



<sup>28</sup>The two surfaces shown are those which will produce the required yield given the individual's preference pattern. If the required yield or the preference pattern were different, the two price surfaces would not be those shown. The relationship of the two will always be the same, however, OG will always be greater than OH; and OD will always be greater than OE. The two price surfaces shown, thus are representative of the family of price surfaces.

<sup>29</sup>An individual will be on a lower utility surface if income tax is collected, than if an equal yield sales tax is collected. See above Figure 3.

<sup>30</sup>Musgrave, op. cit., p. 249.

<sup>31</sup>Kaldor, op. cit., pp. 133-136.

<sup>32</sup>Ibid., pp. 135-136.

<sup>33</sup>Musgrave, op. cit., p. 243.

<sup>34</sup>Kaldor, op. cit., p. 137.

<sup>35</sup>Irregular income may, and usually does, result from external circumstances. In such situations the work effort expended will not be subject to deliberate choice. Kaldor's argument pertains only to a limited number of individuals, who can vary work effort and thus the regularity of the income stream.

<sup>36</sup>"Hence under a progressive system the expenditure tax may have important advantages, despite the higher schedule of rates, even if we suppose that men act on perfectly rational consideration. In fact we cannot assume that they invariably do so; and to the extent that there is an element of irrationality in behavior, it would cause an exaggerated weight to be placed on the disincentive provided by taxation when the tax is levied on income, and equally, to cause an underestimation of its weight when the tax is levied on expenditure." Kaldor, op. cit., p. 138.

<sup>37</sup>See Musgrave, op. cit., pp. 242-243.

<sup>38</sup>See Kaldor, op. cit., pp. 130-140.

<sup>39</sup>Keynes suggested a compulsory savings plan during World War II to be paid for by a general capitol levy after the war. The lower income groups were to be protected by a minimum exemption, progressive rates, and generous family allowances.



John Maynard Keynes, How to Pay for the War (Toronto: Macmillan, 1940).

<sup>40</sup>I.M.D. Little, "Direct vs. Indirect Taxes," Economic Journal, LXI (Sept., 1951), p. 584. See also W.J. Corbett and D.C. Hague, "Complementarity and the Excess Burden of Taxation," Review of Economic Studies, Ser. 1, XXI (1953-1954), p. 21.





## CHAPTER III

### SALES TAXATION AND PRICE STABILITY IN CANADA

#### Canadian Sales Tax System

Sales taxes are an important source of revenue for the federal government and for nine of the ten provinces. This is not likely to change significantly in the near future.

#### Present Form and Importance as Source of Revenue

At the federal level, the manufacturers' sales tax is levied at a rate of 12%, with 3% of this earmarked for the Old Age Security Fund. There are also the excise taxes of varying rates on certain "luxury" goods and the excise duties on liquor and tobacco. The yield of the manufacturers' sales tax, for the fiscal year ending March 31, 1968, was 18.5% of total tax yield, excluding the Old Age Security Tax portion. Excise taxes and excise duties formed 3.8% and 5.5% of total tax yield in that year. Commodity taxes thus yielded almost 30% of total federal tax revenue. They were second in importance only to income taxes. The personal income tax yielded 31.4% and the corporation income tax 17.5% of tax revenue in 1967-68.

At the provincial level, sales taxes are also important as sources of revenue. The commodity taxes of the provinces vary in coverage and rates. In addition to a retail sales tax



collected in nine of the provinces, there are amusement and admissions, motor and fuel oil, tobacco, and some special commodity and service taxes, which vary from province to province. Table III - 1 indicates the retail taxes as a percentage of total provincial tax revenue. Of the other provincial commodity taxes, the most important is the one on motor fuel and fuel oil, which yielded 16.6% of total provincial tax revenue in 1967-68. Taxes on commodities accounted for just under 50% of provincial tax revenues in the fiscal year ending March 31, 1968.<sup>1</sup>

Table III - 1

Yields of Provincial Retail Sales Taxes As a Percentage of Total Tax Revenue (Canadian Provinces, 1967 - 1968)

<u>Province</u>	<u>Retail Tax Yield</u> (% of Total Tax Yield)
Newfoundland	42.5
Prince Edward Island	29.8
Nova Scotia	27.7
New Brunswick	29.8
Quebec	30.8
Ontario	22.2
Manitoba	18.4
Saskatchewan	28.4
Alberta	No Tax



British Columbia	34.0
All Provinces	26.1

a. Includes special taxes on spirits and tobacco levied under the Hospital Tax Act.

Source: Canadian Tax Foundation, Provincial Finances, 1967-68, Tax Memo, No. 45 (Toronto: Canadian Tax Foundation, 1968), p. 15.

#### Proposed Canadian Sales Tax

Form - The Carter Commission's major recommendations with respect to the form of sales taxation were as follows:

1. The federal government should transfer its manufacturers' sales tax to the retail level.
2. The existing special excise taxes should be abolished.
3. The excise duties should be retained in more or less their present form, except that the former special excises on wine and tobacco be added to this category.
4. The tax base should be broadened to include many services not now covered.
5. All producers' goods should be removed from the list of taxable goods as soon as possible.
6. Except for the proposed changes noted in (4) and (5) above, the present range of exemptions should largely be retained.
7. The federal government should negotiate with the provinces the adoption of a common tax base.
8. The constitution should be altered to enable the





provinces to collect an indirect form of sales tax. The provinces would then collect all sales taxes and remit the federal government's share to it.

9. At some future time, the federal government should exchange some of its sales tax room with the provinces for some additional income tax room.

10. The importance of the sales tax as a source of revenue be reduced somewhat for equity reasons.

These recommendations amount to a thorough and radical revision of the Canadian system of indirect taxation. The possibility of the acceptance of these recommendations in their entirety in the near future is remote. The visibility of the proposed tax, the complex problems in federal - provincial relations which the recommendations will raise and certain transitional problems are the principal reasons for this skeptical conclusion.

Tax visibility - The proposed retail sales tax would be levied at a rate of approximately 15%. The political implications of a highly visible tax of this size are extremely interesting.

It is obvious that people in Canada are largely ignorant of the existing manufacturers' sales tax. The appearance of the tax at the retail level would, consequently, be regarded by many as a new tax. A very brave politician would be required to risk adopting the Carter recommendations in such circumstances. Presumably a campaign could be mounted which



would alert most people to the facts. Even with a successful educational effort, the actual changeover would be risky. A credibility gap would certainly arise, unless pre-tax prices could be forced down.

Beyond the possibilities of a false impression being held by taxpayers and a malfunction in the price system, however, lies a deeper issue. Which have the greater merit; open or hidden taxes? Economists can be found to support both points of view.<sup>2</sup> One cannot be quite so sure of a lack of unanimity among politicians, at least not among those in power.

There is no doubt that the proposed retail tax would be considerably more visible than the present manufacturer's tax. It might be possible for retailers to include the tax in prices, but the difficulties associated with this approach would be numerous. Retailers are likely to be anxious to indicate the portion of the price which is tax to avoid taxpayer disapproval; therefore any attempt to "hide" the tax is likely doomed to failure. Second, the problems of adjusting prices in response to changes in demand or changes in tax rates would be great.

Despite the complications involved in attempting to hide a retail tax, there appears to be a widespread feeling that a sales tax with high rates must be hidden. If it is not, widespread opposition and evasion would occur, even though the total amount is the same as previously paid through the hidden tax.



The advantages claimed for hidden taxes are mainly psychological. They thus are outside the realm of economics proper. Morag has emphasized that this does not make such considerations unimportant.<sup>3</sup> If psychological costs are associated with open taxes, they must be considered as would any other cost. Clearly the weight to be attached to such costs cannot be evaluated by economists.

The "psychological cost" argument for hidden taxes has been severely criticized, as it requires long-run irrationality by a significant portion of the taxpayers. Apparently governments should operate on the belief that "the consumer is more concerned with the ultimate disposition of the constituents of his expenditures than with their aggregate size."<sup>4</sup> Since the "psychological cost" argument for hidden taxes depends on what is clearly irrational behavior for the "economic man", appeal must be made to experience. Unfortunately there is little empirical evidence to support either side of the argument. Norway and Sweden have, however, levied a retail tax with fairly high rates for several years with no apparent ill effects.

With regard to the whole problem of hesitancy in applying a high rate retail sales tax, Tarasofsky has concluded that:

"... This apprehensiveness is a function not of reality, but of the politician's eternal preference for taxing by less rather than more, visible means, because of his hope that the







taxpayer (who is also a voter) is least antagonistic to those taxes that intrude least starkly upon his consciousness."<sup>5</sup>

If many people are unaware of the costs of government, this obscurity may lead to incorrect decisions as to the volume of public expenditures. Such a distortion in resource allocation would certainly be a serious problem, and would suggest the use of open taxes. On the other hand, if people are truly oblivious to the costs of government, must not the benefits be equally unrecognized? Complete clarity on one side of the government's budget might lead to a further deviation from the optimum resource allocation, rather than an approach to it. In a situation where insufficient resources are diverted to public use, this would be true. Many people feel that this is the situation today, although many others would disagree.<sup>6</sup>

Considering the complications suggested above, which are clearly outside the field of economics, one must be sympathetic to the principle that the issue of "hidden versus open taxes", be resolved through the political mechanism.<sup>7</sup> This solution, however, leads to somewhat of a dilemma in a democracy. To decide such a problem properly, people must be aware of the issues involved. Once the issues are clear, however, it is too late; psychological costs will be imposed and a return to the state of blissful ignorance will be impossible.<sup>8</sup>

In what must remain a debate largely outside the realm of economics, there is one certainty; a visible tax would be much



more effective if discretionary changes in rates were to be made.<sup>9</sup> If people are to be persuaded to delay expenditures to a later period, they are very much more likely to do so if the costs associated with immediate consumption are obvious.

Federal - Provincial Relations - The implementation of the Carter Commission's recommendations would place some additional strain on federal-provincial fiscal relations. The necessity of introducing a fairly uniform tax base would occasion some disputes, but it seems likely that compromises could be reached on these problems, if the basic problem could be solved.

The basic problem is that the provinces will be unwilling to accept the tax, given the following considerations:

1. Everyone, including the Commission, quickly indicates that a sales tax is to be tolerated rather than desired, because of the inherent problems of equity. The provinces, quite correctly, will be unwilling to collect the "bad" sales tax, while the federal government collects the "good" income tax.

2. The revenues from sales taxes are not as responsive to the changes and growth in the economy as income tax revenues. To be sure, revenues from sales taxes do not fall as quickly in depression, but the provinces are not likely to be comforted by this thought.

3. The provinces would be responsible for collecting a retail sales tax with the highest rates in the world. This is not an attractive prospect.



4. The provinces would lose the flexibility presently available to them through altering the tax base. The opportunity of altering the tax base is attractive, because of its political applications. The exemption from the tax of certain items, such as children's clothing or school supplies, may at times prove very popular. Rates could still be varied, but with the very high rates, this possibility might be somewhat less attractive.

The provinces might be somewhat more willing to accept the proposals, if it did not appear that they would gradually be squeezed out of the income tax field. The Commission suggested this division of tax sources in the interest of fiscal responsibility. While fiscal responsibility may be important, the proposal may introduce an undesirable inflexibility. If the provincial revenue requirements expanded more rapidly than those of the federal government, the result would be an undesirable tax mix from the Commission's viewpoint.

In order for the provinces to accept the sales tax proposals, it therefore seems probable that some adjustment in the plan calling for gradual withdrawal of the federal government from the sales tax field would be required.

Transitional Problems - A change in tax structure of the magnitude envisioned by the Carter Commission could scarcely occur without some problems of transition. The two major problems would likely arise in connection with tax-paid







inventories and price effects.

There are a number of inventories in Canada upon which taxes have already been paid. If a tax was suddenly switched from the manufacturers' to the retail level, companies holding these inventories would be subject to a considerable loss. There is no completely general solution to this problem. Administrative flexibility and the willingness to suffer some loss of revenue would be necessary to achieve the switch-over without gross inequities occurring.

The tendency of prices to rise with the introduction of the tax at the retail level would be troublesome. Any firm in the chain of distribution which had a desire to increase its prices might find the change-over a welcome opportunity. The only solution to this possibility would be extensive taxpayer education and the willingness of the government to apply strict preventive measures. Tarasofsky, in his study of the feasibility of a federal retail sales tax, reached an optimistic conclusion in regard to price increases.

"On balance it appears likely that there are only the slightest grounds for entertaining fears that the structure and competitive nature of the Canadian economy will permit significant increases in consumer costs, if the sales tax base is shifted from its current level. These grounds shrink to the point of practical disappearance when the variety and potency of preventive measures available to the authorities are considered."<sup>10</sup>

#### Discretionary Use of Sales and Excise Taxes

Experience with the use of a general sales tax for purposes



of stabilization is quite limited. In a number of cases, sales taxes have been introduced primarily to curb inflationary pressures, but manipulation of the rates of an existing tax for this purpose is extremely rare. The existence of these two distinctly different cases may explain some of the confusion that usually arises when stabilization policy and sales taxes are discussed.<sup>11</sup> Some of the problems associated with the imposition of an entirely new tax often appear to intrude into discussions of discretionary use of an existing tax. This section will be primarily concerned with the latter situation. In addition, the effects of changes in tax rates by classes of goods and services will be discussed briefly. This is, in effect, the use of special, temporary excises.

#### History of Discretionary Use of Sales and Special Excise Taxes

Although sales taxes have been used for stabilization purposes, revenue considerations are almost always paramount. Thus, even when stabilization is a stated consideration, one must be suspicious that it is merely a rationalization of increased taxation for revenue purposes. In fact, the distinguishing feature of a successful temporary tax to combat inflation would be its poor yield. Indeed, a tax that was completely successful in persuading people to postpone consumption would produce no yield at all. The conflict may be more apparent than real: a sales tax which reduces the real



value of expenditures also achieves the fiscal purpose. The gap between stated and intended goals thus may not be of too great an importance in practice.

The Norwegian experience with sales taxation is particularly relevant for Canada. It is the only country which has used a retail tax with a rate structure roughly equivalent to that of the proposed Canadian tax. At the same time, it has made use of general changes in the rate structure for fiscal policy purposes. It is unfortunate that there is very little information available on the Norwegian sales tax experience.

Norway adopted a multiple-stage tax in the early 1930's in an attempt to balance the budget. The tax applied to all transactions except the sale by the manufacturer. In the early years of the Second World War, severe inflationary pressures developed. The tax rate was, as a result, raised by two per cent to curtail spending. After occupation by the Germans, the "caretaker" government deemed further increases to be necessary. It was obvious, however, that further expansion of the tax would not be accepted unless some basic changes were made. The previous increase had greatly increased the problems associated with the turn-over form of the tax. The solution adopted was to transfer the tax to the retail level. At the same time, the 10% tax rate established approximately doubled the effective rate. When inflation eased in 1947, the rate was lowered to  $6\frac{1}{4}\%$ . Renewed inflation and







increased defence spending led to a restoration of the 10% rate in 1951. In 1955, the tax base was extended to include building construction and ship building, for purely stabilization purposes.

Finland adopted a sales tax at the manufacturer's level in 1950 with the explicit understanding that rates would be manipulated in the interest of stabilization policy. This has not occurred, and perhaps is an example of a rationalization of the introduction of the tax by ascribing other than purely revenue functions to it.

Use of excise taxes as instruments of stabilization has occurred quite frequently. Canada was the first country to specifically acknowledge this possibility, when in 1920 it expanded the list of goods subject to excise taxes, in part "to check wild spending by consumers." Since then, Denmark, Sweden and Great Britain have introduced and manipulated the rates of excise taxes expressly for purposes of fiscal policy.<sup>12</sup> Other countries, such as the United States, have adopted excise taxes at least partially as stabilization devices.

In Canada, excise taxes have been a part of the tax structure since 1915. They were originally applied to "luxury" items such as jewellery, cosmetics, wines, playing cards, and tobacco, and should be distinguished from the excise duties applying to alcoholic beverages (including beer) and tobacco. As mentioned above, the list of goods taxable by excise was expanded



in 1920 to control consumer spending. During the 1920's the excise taxes were gradually allowed to expire, but revenue requirements caused a reimposition of these levies during the depression. The war years brought a ten-fold increase in rates. In 1947, rates on automobiles and other consumer durables were increased greatly because of foreign exchange difficulties. The industries affected protested vigorously, and the rates were soon lowered. In 1951, the rates of most excise taxes were again raised, this time because of inflationary pressures. Again there was a considerable outcry against this use of excise taxes. As the inflationary pressures proved to be less severe than expected, the government yielded to the opponents of the rate changes.

These experiences illustrate the difficulty of:

1. Distinguishing between the revenue and fiscal effects of the sales tax.
2. Imposing and maintaining taxes which are highly visible and which have different impact on different industries.

#### Form of Discretionary Tax

Discretionary use of commodity taxation may take four basic forms. The forms can be distinguished by the coverage and by the proposed duration of the surtax. The various forms are classified in Table III - 2.



Table III - 2Forms of Discretionary Commodity Taxes

Duration	Coverage	
	General	Specific Commodity or Groups of Commodities
Temporary	1	2
Permanent	3	4

The basic fiscal effects involved in a comparison of temporary and permanent taxes were alluded to in Chapter II. The conclusion was reached that a temporary tax would be considerably more effective in restraining inflation than a tax which was expected to be permanent. This conclusion was based not only upon the greater "economic efficiency" of the temporary tax, but also upon the likelihood that price increases could be more readily restrained if expiration of the surtax was certain. In this section, our primary concern will be with temporary taxes, that is types 1 and 2. Surtaxes, which are permanent or whose date of expiry is uncertain, will not be considered.

The Carter Commission indicated that discretionary use of both type 1 and type 2 taxes was a possibility. In regards to a general surtax, the Commission stated that:

"In times of national emergency it may be necessary to sharply increase the federal sales tax rates."<sup>13</sup> The Commission certainly did not desire or expect that manipulation of





general sales tax rates would become a standard instrument of fiscal policy. The Commission seemed, however, to believe that discretionary use of the general sales tax might be desirable under certain serious circumstances, e.g., extensive inflation or balance of payments difficulties. The Commission appeared to be definitely in favour of discretionary use of excise surtaxes.<sup>14</sup>

The examination of the problems and effects of the discretionary use of sales taxes involves two assumptions.

1. Announcement and imposition of the surtax occur simultaneously.

2. The date of expiry of the surtax is fixed and known. Although the first assumption could not be achieved in practice, adequate provision for implementation of the rate changes would make it almost attainable.<sup>15</sup> The second assumption would hold, if legislators were willing to accept the advantages of a definitely temporary tax.

#### Temporary Taxes and Stabilization Policy

Discretionary rate changes of the type assumed above, would be primarily short-run instruments, capable of being introduced for shorter periods than any fiscal device now available. As the period was lengthened, the effectiveness of the tax in restraining consumption would decline. Is such a instrument of fiscal policy needed in Canada?



Economic conditions are in a constant state of flux. This, of course, is the reason for countercyclical policy being necessary. For policy instruments to be effective, then, they must be flexible. Musgrave suggests that: "In order to secure a flexible policy, it is necessary to minimize the lag between (1) the occurrence of a need for policy adjustments and the recognition of this need; (2) recognition of the need for changes in policy and the implementation of such changes; and (3) introduction of policy changes and their realization in effectively altering the level of income."<sup>16</sup>

In order to combat inflation, forecasting tools must be available that will indicate that inflationary pressures are either developing or will continue. The most sophisticated instrument for prevention of inflation is useless, if reasonably accurate predictions of future price trends are not available. The absence of suitable forecasts has been a problem which has hampered the operation of Canadian price stabilization policy.<sup>17</sup> It appears, however, that trends do continue for sufficient periods to make remedial action desirable, even if preventive action is not practicable.

Once the need for action is perceived, the most effective policies are those that may be initiated quickly. There would appear to be little difference in the possible speed of initiation of changes in sales tax and income tax rates, provided



that procedures in both cases are well designed. An application of differential changes in rates might be somewhat slower, but again properly constructed methods of implementation would reduce this time lag.

One consideration suggests that sales tax rate changes might be applied even more quickly than income tax rate changes. Anticipation of rate changes would be a problem with discretionary use of sales taxes. As a result, decisive action would be required to avoid confusion among the public. Whether this is good or bad depends upon the nature of the government. If the government tends to hesitate unduly, it would be an advantage. On the other hand, it would require more rapid decisions, and this would handicap a good government. It is interesting to note in this respect that the Carter Commission stated: "We require a method (of changes in tax-expenditure policy for stabilization purposes) that makes it difficult for governments to procrastinate."<sup>18</sup>

Once a policy has been initiated there may be considerable delay in the appearance of results. The advantage of sales taxes over income taxes will be greatest in this respect. With a temporary income tax, consumption is likely to be maintained at the expense of savings. There is really no penalty attached to maintenance of consumption; indeed in terms of economic welfare this may be the most reasonable course to follow. A temporary sales tax, on the other hand provides an incentive to







delay consumption. Consumption will decline very quickly.

### Special Problems Associated with Discretionary Use of Sales Taxes

The Carter Commission concluded that changes in income tax rates are more effective as stabilization devices than changes in sales tax rates. This conclusion was based on the existence of two problems associated with the use of sales taxes; anticipation and induced price changes.

The Commission felt that: "Frequent use of changes in sales or excise taxes will lead to speculative anticipation of such actions."<sup>19</sup> It is clear that such anticipation would be destabilizing. If people felt that because of inflationary pressures, an increase in the tax rate was imminent, there would be a rush to buy before the implementation of the tax. This, in turn, would lead to further pressure on aggregate supply and the price level. Such occurrences could cause misjudgements to occur as to the strength of the inflationary pressures. If the anticipation of rate changes became widespread, this would certainly weigh against discretionary use of sales taxation. This would not be a great danger if forecasting became sufficiently advanced to allow preventive action to be taken. With the present state of forecasting, however, the public is likely to be well aware of the probable direction of government policy.

The inducement of further price increases by the application



of sales taxes is the most serious disadvantage of discretionary use of these taxes. The problems involved were discussed in detail previously.<sup>20</sup> It is worth emphasizing again, however, that a strictly temporary surtax on sales would be the form of retail sales tax most likely to avoid the undesirable secondary price effects.

#### A Temporary Tax and the Time Pattern of Consumption

Many actions of consumers are customary or routine: others are sporadic and planned.<sup>21</sup> The customary or routine expenditures of consumers may change, but only slowly or as a result of a radical change in their economic circumstances. Purchases of many services and goods not readily stored are almost automatic, usually because any attempt to avoid such recurrent purchases would be inconvenient and expensive. On the other hand, the purchases of other goods and services are, for the individual consumer, irregular and usually involve planning. The expenditures may be large, and may yield their benefits immediately (a trip to Europe) or over a period of time (a new car). The exact time of purchase can be adjusted within limits without a serious loss of welfare by the consumer.

The division between routine and discretionary consumption would vary among individuals according to their personal time preferences and the influence of impatience; the extent to which the purchase of a good may be delayed is also affected by the age of the existing stock of the good.



Various means by which taxes may reduce consumption expenditures and thus aid in the control of inflation have been discussed. The division of consumption expenditures into the routine and discretionary groupings suggests a further means of inflation control: the directing of discretionary consumption to periods of deficient aggregate demand from periods of excess demand.

A temporary sales tax would provide considerable incentive to alter time patterns of discretionary consumption, by substantially increasing the effective rate of interest.<sup>22</sup> Moreover the sales tax is paid at the time of purchase of a good, and thus is directly associated with the purchase. The amount that could be gained by postponing expenditures is obvious to the buyer.

Faced with the obvious advantages of postponing discretionary consumption, many individuals presumably would do so. This effect does not require any change in the long run level of savings, and thus does not require the assumption that savings are a function of the interest rate. It merely requires the assumption that consumers will alter their time pattern of consumption in response to temporarily high, effective rates of interest. There are three situations in which a temporary increase in general sales tax rates could be beneficial: (a) wartime, (b) an inflationary period in peacetime, and (c) an exchange crisis resulting from a balance







of payment deficit. The objectives and the effects of a temporary sales tax would be somewhat different in each of the three situations.

During wartime, the effectiveness of a tax must be measured by its success in facilitating the transfer of resources from the production of consumers' goods to the production of war goods. "Discretionary" consumption goods are likely to be produced by factors which are readily converted to the production of equipment for the war effort. This is especially true for the factors involved in the production of consumer durables, which form a significant portion of "discretionary" consumption. Indeed it has often been suggested that the purchase of consumer durables be classified as an investment. If this conceptual framework were used, the temporary sales could be said to have caused a reallocation of investment from "non-essential" to "essential" Production. After the war ended, the delayed demand would provide the incentives for a rapid and smooth return to peace-time production.<sup>23</sup>

Peacetime use of a temporary sales surtax does not appear as attractive as wartime use. The emphasis is likely to be on stability over the business cycle rather than resource allocation. An effective temporary sales tax would decrease demand during the peak demand periods and release it during the periods of excess capacity. This would protect against overexpansion of production capacity during the boom, especially



in the "discretionary" goods category, which are likely to be especially vulnerable to cyclical swings. Government control of "instalment credit" and "hire purchase" plans indicate an awareness of the sale of consumer durables during business cycles. The delayed demand would then provide an offset to declines in other sources of demand in the cyclical downswing. Unfortunately, business cycles are not likely to be of such a simple form. With inadequate forecasts, a temporary surtax might expire at the worst possible time, and add to a further surge of inflationary demand.

One peacetime situation in which a temporary general sales tax might be quite effective is during a foreign exchange crisis brought about by balance-of-payments problems. Such a crisis is likely to be of short duration if decisive action is taken to restore confidence in the affected currency. The necessary actions would include various monetary operations and possibly devaluation. Restrictive fiscal measures are usually applied as an adjunct to the monetary measures. A temporary sales tax would produce an impetus to restrain consumption and thus imports, until the more long-term adjustments have a chance to work.

#### Neutrality and Equity with a Temporary Tax

The assumption underlying the above analysis is that a temporary sales tax would be largely neutral with respect to



the mix of goods and services purchased, but that the tax would have considerable impact on the time at which the goods and services were purchased. The tax would, however, not be wholly neutral. As an example, consumers who regularly purchased a car every year, might skip a year due to the tax. This would mean one less car purchased in total. The released income would be reallocated to other goods and services or savings.

The introduction of time into the discussion of equity would produce some interesting results. The individual who purchased a good would bear the monetary burden of a temporary tax, but the individual who delayed his purchase would presumably bear some burden also, the burden being the psychic costs resulting from the postponement of consumption. A consumer thus would be burdened by a temporary tax even though he did not pay anything, and eventually received all the goods he would have had without the tax.

#### Temporary Excise Taxes

The Carter Commission indicated that: "In periods of incipient inflation it may be necessary to impose special temporary excise taxes on certain broad classes of goods, such as consumer durables to reduce private demand for them."<sup>24</sup> The Commission appeared to assume that the temporary taxes would be applied to "discretionary" consumption goods. The





resulting effects would then be much the same as those discussed above. Of course, the substitution of non-taxable for taxable goods would destroy the neutrality claimed for the general surtax.

The principal problem in the imposition of temporary excise taxes is likely to be the opposition of the industries affected. This has been the experience in the past, although the temporary nature of taxes was not emphasized. The acceptance of certain discriminatory, permanent, excise taxes by the public and to a lesser extent by the industries involved, indicates that temporary excise taxes would be accepted, if their merit could be conclusively exhibited.

If the government wishes to obtain a larger than usual portion of a certain good, a discriminatory excise tax will be the most "efficient" tax.<sup>25</sup> In this situation, the industry affected may not object too strenuously since its output will not fall. The industry's only grounds for objection would be the absence of the price and output increases, which would occur without the tax. If the objective of the government is to release factors of production utilized by the industry, strenuous objections are likely to be raised.

In an inflationary situation, temporary excise taxes could decrease demand in "bottleneck" industries. "Bottleneck" industries are those in which demand will decrease more rapidly than supply during expansionary periods. As a result prices



will increase, and these price increases may spread through the economy. Since "bottleneck" industries will be affected to a great extent by the business cycle, they may be willing to accept the temporary excise taxes, if the government takes steps to increase demand in other periods.<sup>26</sup>

### Conclusions

From a purely economic standpoint, the adoption of the recommendations of the Carter Commission would greatly improve the existing Canadian sales tax system. The existence of other factors however, especially the visibility of the recommended tax and the problems of dominion-provincial relations it raises, suggests that it may be considerable time before such a complete revision of the Canadian sales tax system actually occurs.

Temporary sales or excise taxes could be powerful instruments for directing the time pattern of consumption. During periods of inflation or balance-of-payments problems caused by excess demand either in general or in certain sectors of the economy, temporary sales or excise taxes would be very effective. Unfortunately the present state of economic forecasting would cause considerable risk to be attached to use of these taxes for stabilization purposes. A situation in which the pent-up demand for discretionary consumption goods was released during a period of further inflationary tendencies could prove disastrous. Anticipation of rate changes and induced price increases would produce additional problems.





# NOTES

<sup>1</sup>All the percentages quoted are derived from figures in publications of the Canadian Tax Foundation. Canadian Tax Foundation, Provincial Finances, 1967-68, Tax Memo, No. 45 (Toronto: Canadian Tax Foundation, 1968). Canadian Tax Foundation, The National Finances (Toronto: Canadian Tax Foundation, 1968).

<sup>2</sup>The Carter Commission felt that better taxpayer awareness is in the interests of fiscal responsibility. Amotz Morag has stated the case for indirect taxes. See Amotz Morag, On Taxes and Inflation (New York: Random House, 1965), pp. 127-141. Completing the spectrum, a third view is that the visibility of a tax is irrelevant. See A. Kenneth Eaton, Essays in Taxation (Toronto: Canadian Tax Foundation, 1966), pp. 88-89.

<sup>3</sup>"...The psychological disadvantages of taxes should not be underestimated, as indeed they are not by both tax legislators and administrators." Morag, op. cit., p. 128.

<sup>4</sup>Abraham Tarasofsky, The Feasibility of a Canadian Federal Sales Tax, Studies of the Royal Commission on Taxation, No. 6 (Ottawa: Queen's Printer, 1964), p. 65.

<sup>5</sup>Ibid., p. 65.

<sup>6</sup>See John Kenneth Galbraith, The Affluent Society (Cambridge: Riverside Press, 1958), especially pp. 315-320.

<sup>7</sup>"These are basic political issues, which can presumably only be resolved through the political mechanism." Richard M. Bird, Sales Tax and the Carter Report (Don Mills: C. C. H. Canadian, 1967), p. 26.

<sup>8</sup>This is merely an example of the difficulties encountered in obtaining a social ranking of various states of the economy. There is a rapidly expanding literature on this particular problem, with Arrow's possibility theorem being especially important. See James Quirk and Rubin Saposnik, Introduction to General Equilibrium Theory and Welfare Economics (New York: McGraw-Hill, 1968), pp. 103-116.

<sup>9</sup>"Much of the impact of a policy change may be lost if insufficient publicity is given to it and the government fails to relate the change to well defined policy goals and the current economic situation." Robert M. Will, The Budget as an Economic Document, Studies of the Royal Commission on Taxation, No. 1 (Ottawa: Queen's Printer, 1964), p. 35.





<sup>10</sup> Tarasofsky, op. cit., p. 45.

<sup>11</sup> The Carter Commission exhibited this confusion when it listed possible use of the sales tax for stabilization purposes as one of the reasons for its maintenance at the federal level (Vol. V, pp. 4-5), but stated elsewhere in the Report that such use is unlikely to be successful (Vol. II, p. 60). Report of the Royal Commission on Taxation, Kenneth LeM. Carter, chairman (6 vols.; Ottawa: Queen's Printer, 1966).

<sup>12</sup> The British tax is actually a purchase tax applying to a wide range of commodities at the wholesale level. In the broadest sense then, it is a general sales tax with considerable differentiation of rates. When used for fiscal policy purposes, however, the method has been to change the rates on particular goods rather than on all goods. In respect to use for stabilization purposes, it is better to consider it among the excise taxes.

<sup>13</sup> Carter Commission, op. cit., Vol. V, p. 4.

<sup>14</sup> "In periods of incipient inflation it may be necessary to impose special temporary excise taxes on certain broad classes of goods, such as consumer durables, to reduce private demand for them." Ibid., Vol. V, pp. 4-5.

<sup>15</sup> Three sets of rate cards for 15%, 20%, and 25% might be issued. Adoption of the new rates could then occur very quickly. This is not to deny that there would be some administrative problems involved.

<sup>16</sup> Richard A. Musgrave, The Theory of Public Finance (New York: McGraw-Hill, 1959), p. 501.

<sup>17</sup> "The economic intelligence available to fiscal policy-makers in the post-war period, while as good as existing data and forecasting techniques made possible, fell short of the requirements of a successful stabilization policy." Robert M. Will, Canadian Fiscal Policy, 1945-63, Studies of the Royal Commission on Taxation, No. 17 (Ottawa: Queen's Printer, 1966), p. 93.

<sup>18</sup> Carter Commission, op. cit., Vol II, p. 83.

<sup>19</sup> Ibid., Vol II, p. 60.

<sup>20</sup> See pp. 68-71 above.

<sup>21</sup> See George Katona, Psychological Analysis of Economic Behavior (New York: McGraw-Hill, 1951), pp. 63-85.



22 A temporary sales tax causes the effective rate of interest to become  $(i + t) / (i - t)$ . With a market rate of interest of 5% and a temporary surtax on sales of 25%, the effective rate of interest becomes 40%.

23 The existence of discretionary consumption which may be delayed but not forgotten provides an excellent explanation of the remarkably strong demand in the post-war years.

24 Carter Commission, op. cit., Vol. V, pp. 4-5.

25 See Morag, op. cit., pp. 49-51.

26 There have been several proposals for excise tax incentives to industries which are subject to large short-run fluctuations in production and employment. For one proposal, see Mordechai E. Kreinin, "Use of the Excise Tax as a Counter-cyclical Measure," Review of Economics and Statistics (Aug., 1959), pp. 319-320.



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